BEIHEFT ZUR
NOVA HEDWIGIA

HEFT 29

MYCOFLORA AUSTRALIS

BY

ROLF SINGER

(CHICAGO)

3301 LEHRE
VERLAG VON J. CRAMER
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Introduction

The present paper contains the descriptive data and references to these data on the sufficiently well known species occurring in Southern South America and Antarctica as far as the Higher fungi, i.e. the Agaricales, fleshy Aphyllophorales, and the Hymenogastrineae, Hysterangiineae and Phallineae are concerned. A book containing the respective keys to the genera and species as well as the necessary illustrations is at present in print and should be consulted (edited in Spanish—Editorial Universitaria Santiago).

Together these two volumes represent the first Macromycete flora of the temperate and frigid part of South America and the Antarctica, a region including mainly the entire area of the South American Nothofagus woods, all of Southern Chile, Patagonia, Tierra del Fuego, the Palmer Peninsula (Antarctic Peninsula) and South Shetlands, the South Atlantic Islands (Tristan da Cunya; Malvinas) and the Islands Juan Fernandez in the Pacific. Until now, only lists of species collected in some of these regions have been published and occasional monographs have mentioned species from Southern South America.

The species treated here have been collected during numerous trips and expedictions in the period of 1950 until 1968 and include also the minority of species known only from the type locality and seen by the author, as far as they are represented in the herbaria and apt to be interpreted. It is of course impossible to state that the present compendium of the Mycoflora Australis is complete. It is well known that, as in Europe or North America, new forms are still occasionally encountered in regions believed to be thoroughly explored. Nevertheless, we are convinced that eighteen years of extensive collecting and intensive phytosociological activity—after the classical period of discovery, going back to Darwin and terminating in Spegazzini's numerous contributions—have unearthed the basic knowledge of the macromycete flora of Southern South America and the Antarctica so that we may safely assume that our text is representative for that flora. This will enable us to compare our mycoflora with that of other regions, to present mycological data with regard to the problems of phytogeography and plant migration, and to provide a guide for forest botany, ecology, mushroom producers and exporters, phyto-

pathologists, and those interested in tree mycorrhizae, to identify the material at hand.

The significant difference between this present work and the literature available before it started, will be found in the application of modern research methods, that had not been at the disposal of the classical authors in the field. Thus, we are now able to bring all taxa into the light of modern systems of classification, specifically, into the framework of the classification now adopted in Europe and North America for all the groups involved. As for Agaricales, we are using my own classification (Agaricales in modern Taxonomy, Cramer 1962), and for the Gastromycetes treated here, we use the principles introduced by Singer & Smith, Singer, and Smith as well as other contemporaneous writers. In the Aphyllophorales we have likewise used the most modern approaches available, although, lacking a completed system of classification in this latter group, it was considered necessary to propose two new families. These will be further commented on and justified in two forthcoming publications.

The phyotogeographical consequences of the new data, now available, will be treated—together with the ecological role of the fungi in ectotrophic mycorrhiza and forest sociology, in a forthcoming third paper on the Mycoflora Australis.

The ecological and phytosociological work was carried out by teams under the direction of the author of the present paper, with the collaboration of Dr. Jorge H. Morello, between 1962 and 1968. The specimens collected since 1950 are deposited at LIL (Instituto Miguel Lillo, Universidad Nacional de Tucumán), BAFC (Universidad de Buenos Aires, Departamento de Biología), SGO (Museo Nacional de Historia Natural, Santiago de Chile); duplicates of some of the collections, including syntypes, may be found at MICH (University Herbarium of the University of Michigan, Ann Arbor, Mich., U.S.A.) and F (Field Museum of Natural History, Chicago, Ill., U.S.A). As for the classical types studied, they are conserved at S (Riksmuseet Stockholm), LSP (Instituto C. Spegazzini, La Plata, Argentina), K (Kew Herbarium, Kew, England), FH (Farlow Herbarium, Harvard University, Cambridge, Mass., U.S.A.), PC (Muséum National d'Historie Naturelle, Section Cryptogamique, Paris, France) and a few smaller herbaria, including the Herbarium Ruiz Leal, Mendoza, Argentina.

The author is indebted for financial and organisatorial help especially from the National Science Foundation, Washington, D.C., the Ministerio de Educación of the Chilean Republic and the Director of the Museo Nacional de Historia Natural, Dr. Grete Mostny, the Instituto Miguel Lillo, Tucumán, especially its ex-Director Dr. Horacio R. Descole, the

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I also wish to express my gratitude to all those who have contributed material, advice, friendship and help, including my travel companions J. Diem, P. Hernandez, W. Lazo, J. H. Morello, M. Moser, C. Muñoz P., B. Oehrens B., R. Piterbarg, L. Pizzini, G. Sarmiento, E. Sierra, E. R. de la Sota, my wife, Martha Singer and daughter Amparo Heidi Singer de Eustaquio.

In certain groups, I am thankful for identification of species, especially to Dr. Corner (clavarioid fungi) and Dr. Maas Gesteranus (*Phellodon*).

TAXONOMIC PART

(*Agaricales*)

POLYPORACEAE (sensu stricto)

Polyporus

POLYPORUS GAYANUS Lév., Ann. Sc. nat. III.5 : no. 54. 1846.

Pileus gilvous, more rusty fulvous towards the margin, glabrous, orbicular, more or less radially innately striate-fibrillose, without zonation, 14–34 mm broad,—Tubes short ; pores small, white, then cinnamon whitish, at times fulvescent in age, subangular, decurrent.—Stipe absent and then replaced by a lateral black zone, or present and then generally short to very short, and with whitish apex and a narrow black base, or entirely black, smooth or almost so, subglabrous or glabrous.—Context white or whitish, unchanging, toughish, inodorous.

Spores 9–10.5 × 2.5–3 μ, cylindric to rod shaped, hyaline, smooth, inamyloid, at times somewhat curved.—Basidia 17.5–20 × 6.5 μ, eventually often with filamentous apical excrescency, normally 4-spored, clavate.—Cystidia, none seen.—Subhymenium distinct, of small short elements which are thinwalled ; hymenophoral of interwoven hyphae running in all directions, thickwalled, some almost solid, moderately broad, filamentous, hyaline, inamyloid, with clamp connections.—Cuticular layer of pileus—a little differentiated layer of thickwalled to solid hyphae 4–6 μ broad, forming a trichodermium.

On fallen branches and on dead trunks of various frondose trees, principally *Nothofagus,* but also *Laurelia* and other dicotyledous trees, often infecting standing trees and fruiting when the infected branches fall to the ground, September until April, rather common.

Material studied : ARGENTINA : Neuquén : Quetrihué, "Los Arrayanes", 11–XI–1966, Singer M 6061 (BAFC).—CHILE : Llanquihue : El Frutillar, 15–IX–1967, Singer (SGO).—Valdivia : Cuesta Sta. Elvira, 13–IX–1967, Singer M. 7500 (SGO).

POLYPORUS DICTYOPUS Mont., Ann. Science. Nat. II.3 : 349. 1835.

A description of topotypic material has been given by Singer, Ark. Bot. 4 : 378. 1959. The species has been found, aside from the islands of Juan Fernandez (S), also on wood of *Aextoxicum punctatum* (?) at Lago

Puyehue, 14–IX–1967, Singer M 7527 (SGO). This Chilean material showed dimitic hyphal structure ; the spores were sligthly smaller than given by Singer, l.c. viz. 6–6.7 × 2–2.8 µ. The trama showed numerous skeletal hyphae.

☐ *POLYPORUS MACULATISSIMUS* Lloyd, (Mycol. Writ. 7:1113. 1922) is the fungus often erroneously referred to as *Polyporus squamosus* Huds. ex Fr. since the latter does not occur in the *Nothofagus* area of South America. We have once observed an astipitate form (LIL).

Pleurotus

PLEUROTUS ERYNGII (D.C. ex Fr) Quél., or a form or race of it, is the species represented in our region by the type of *Clitocybe tucala* Speg., Bol. Acad. Nac. Genc. Cordoba 11: 139. 1887 (type lost), which we consider identical with a later collection described and discussed by Singer, Lilloa 23 : 180. 1951. Horak (Darwiniana 14 : 367. 1967) finds shorter and broader spores in this material, but we considered these spores as either foreign or undeveloped. Good descriptions of the various forms of *P. eryngii* can be found in the current European literature ; see also Singer, Sydowia 6 : 212. 1952. A revision of what we consider "neotype" of *C. tucala* (March 1903, LPS 2898) revealed spores (5)–7–8(10) × (2)–3.2–3.8–(4) µ and hyphae with clamp (revision 1965).

PLEUROTUS SUTHERLANDII Sing., Sydowia 6 : 211. 1952.

This species has been described by its author l.c. Additional material (ARGENTINA: Rio Negro: Laguna Frías, 4–V–1964, Singer M 3847a, BAFC) differs from the type in having subcentral stipe; it grew on a piece of dead wood of *Nothofagus dombeyi* or *N. pumilio*. The center of the pileus was "spice" (M & P), duller watery ochraceous fulvous towards the margin and the surface is somewhat hygrophanous. Cheilocystidia were versiform and often lageniform, e. gr. 38 × 5 µ. The lamellae were "tawny" (M & P) when fresh, with paler edges. The appearance of the fresh fungus is that of a *Clitocybe* or *Collybia*. Care should be taken not to confuse this species with some of these latter genera.

Camarophyllus Kummer[1])

CAMAROPHYLLUS ADONIS Sing., Sydowia 6 : 172. 1952.—This species was fully described l.c. Additional material has been found in northwestern Patagonia, South and Central Chile.

Camarophyllus **patagonicus** Sing. sec. nov.—Pileo fusco-brunneo vel fuligineo-fusco vel spadiceo, plerumque subgriseotincto, subhygrophano vel hygrophano, depallente usque ad brunneolo-pallidum centro obscuriore, haud viscido, levi vel leniter pellucide striato ad marginem, glabro, primum convexo-umbilicato, dein convexo centroque depresso vel infundibuliformi, interdum primum haud umbilicato, 9–28 mm lato.—Lamellis albis, in parte centrali latiusculis vel latissimis, subdistantibus vel frequentius distantibus, interdum crispis, arcuatis vel descendentibus, decurrentibus.—Stipite albo vel albido vel pallide fuscidulo, glabro, cavo, aequali vel subaequali vel apicem vel basin versus attenuato, 13–37 × 1–4.5 mm—Contexto albo, immutabili, carnoso, inodoro vel odore subraphanaceo gaudente.—Sporis 8–12 × 4–6 μ, plerumque ± 10 × 4.8–5 μ, levibus, hyalinis, inamyloideis, ellipsoideis vel cylindraceis vel oblongis, tenuitunicatis, gutta majuscula elongata plerumque instructis.—Hymenio e basidiis basidiolisque tantum efformato, basidiis 41–52 × 6–9 μ, bisporis, rarius nonnullis tetrasporis vel monosporis intermixtis, fibula basali destitutis.—Hyphis irregulariter intertextis in tramate hymenophorali et hymenopodio interdum minus irregulari nec non ex hyphis angustioribus consistente; interdum subaxialiter dispositis in strato centrali et ibi pallidissime fuscidulis sed in hymenopodio hyalinis, defibulatis, 2.5–11 μ latis. —Strato cuticulari pilei hyphis repentibus, filamentosis, levibus, haud gelatinosis, clare fuscidulis (KOH), 1.5–6 μ crassis consistente; in carne subjacente hyphis minus densis, hyalinis, omnibus fibulis destitutis.—Ad terram in pratis subhumidis vel pascuis, gregatim, Aprili usque ad Junium. Typus prope Puerto Montt collectus (SGO).

Material studied: ARGENTINA: Neuquén; Villa Angostura, 22–IV–

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[1]) Donk (Beih. Nova Hedwigia 5: 43. 1963) has insisted on the first choice of a nomenclatorial type of this genus (but for *Camarophyllus* (Fr.) Karst.!) which would be *Agaricus camarophyllus* A. & S. ex Fr. If *Camarophyllus* Kummer is regarded as an independent genus, the first choice of a type would be *C. pratensis*. If the generic name is cited as *Camarophyllus* (Fr.) Kummer, Donk's selection of a lectotype appears correct. In this case, all the species indicated above under *Camarophyllus* would have to be transferred to *Aeruginospora* Höhnel.

1965, Singer M 5203 (BAFC).—Buenos Aires: Hudson Museum, 12–VI–1965, Singer S 515 (S).—CHILE: Llanquihue: Entre Puerto Montt y San Agustín, 8–V–1967, Singer M 6790 (SGO).

This is an interesting species, obviously closely related to *C. recurvatus*, but differing, aside from some minor characters, in the clampless hyphae. This leads one to believe that the genus *Hygrotrama* = *Aeruginospora*, as maintained repeatedly by Hesler & Smith, cannot, with its present delimitation, be separated from *Camarophyllus* and must therefore be considered as congeneric.

CAMAROPHYLLUS RECURVATUS (Peck) Murr., North Am. Fl. 9: 388. 1916.

Hygrophorus recurvatus Peck, N. Y. St. Mus Bull. 157: 28. 1912.
Clitocybe praticola Murr., Lloydia 5: 136. 1942.
Omphalina australis Murr., Proc. Fla. Acad. Sc. 7: 111. 1945.

The material studied by me coincides perfectly with the notes taken on North American material as well as with the description given by Hesler & Smith (North American species of Hygrophorus, pp. 79–81, 1963).

Material studied: ARGENTINA: Tierra del Fuego: near Ushuaia, IV–1960, leg. Heidi A. Singer (SGO).—CHILE: Llanquihue: Entre Puerto Montt y San Agustín, 8–V–1967, Singer M 6790a (SGO); also numerous North American collections.

Camarophyllus cremeus (Murr.) Sing. comb. nov.

Omphalina cremea Murr., North Am. Fl. 9: 350. 1916.
Hygrophorus cremeus (Murr.) Dennis, Kew Bull. for 1953, p. 257.

We have not studied the type, but refer to the description given by Dennis, l.c. with which our material agrees reasonably well:

Pileus straw (11–E–2, M & P) to whitish, quite dry, sometimes on margin weakly transparently striate, convex, glabrous, not umbonate, but frequently umbilicate, 11–23 mm broad.—Lamellae concolorous with the pileus, medium broad, distant, in smaller caps all equal, in medium sized caps some lamellulae intermixed and these narrower than the through-lamellae, in large caps sometimes regularly intermixed, vaguely cross-rugulose but not intervenose, decurrent.—Stipe concolorous with the pileus excepting the base which tends to "roe" or "tuscan tan" (M & P), subequal, not viscid, hollow, up to 40 × 2.5 mm.—Context white or whitish, unchanging, inodorous.

Spores 8–9.5 × 4.2–5 μ, smooth, hyaline, oblong to ellipsoid.—Basidia 38–52 × 6–7.5 μ, 2–4-spored, more frequently 4-spored and then relatively broad, more rarely two-spored and then relatively narrow, with basal clamp; cystidia none of any kind.—Hyphae with clamp connections,

hyaline, in the hymenophoral trama more or less axially arranged but strongly interwoven, otherwise irregularly interwoven, not gelatinous, thin and filamentous.—Epicutis of pileus little differentiated from the hypodermium, the former of thin-filamentous hyphae and not gelatinized, hyphae repent on surface.

Sheltered place on the ground in moderately dense woods of *Nothofagus antarctica*. Found only once: ARGENTINA: Neuquén: Arroyo Frutillas, 28–IV–1965, Singer M 3613 (BAFC).

CAMAROPHYLLUS PRATENSIS (Fr.) Kummer, Führ. Pilzk. p. 118. 1871.

This common cosmopolitan species has been observed in the region of Lago Nahuel Huapí, especially in myrtaceous woods; it was described (its South American forest inhabiting form) by Singer & Digilio, Lilloa 25: 12–14, 1952. In Europe and in some parks in South America, the species is predominantly found in meadows, outside the forest.

CAMAROPHYLLUS TEHUELCHES (Speg.) Sing., Sydowia 6: 169. 1952.

Agaricus tehuelches Speg., Bol. Acad. Cienc. Cordoba 11: 6. 1887.
Clitocybe tehuelches (Speg.) Sacc., Syll. Fung. 5: 23. 1891.
Omphalia tehuelches (Speg.) Speg., An. Soc. Cient. Arg. 94: 68. 1922.

A complete description of this species was published by Singer, Sydowia 6: 169. 1952, and Singer & Digilio, Lilloa 25: 8. 1951 (1952).

Material studied: ARGENTINA: Tierra del Fuego, Estancia Nueva Argentina, 12/21–II–1950, Singer M 213, M 338, M 413 (LIL).—Neuquén, Cerro Colorado, 1650 m alt., 10–IX–1959, Singer M 1736 (LIL).

CAMAROPHYLLUS LACCARIOIDES Sing., Sydowia 6: 170. 1952.

This was completely described l.c.

Hygrocybe

Hygrocybe araucana Sing. spec. nov.—Pileo rubro, siccando flavo-pallescente, glutinoso, glabro, campanulato-conico, dein campanulato-convexo subumbonato, ± 14 mm lato, 11 mm alto.—Lamellis albis, adnatis, nec liberis nec umquam decurrentibus, angustis, subascendentibus.—Stipite ad apicem rubro, ceterum aurantiaco vel stramineo basi lateritia excepta, viscoso vel glutinoso, glabro, levi, aequali sed ad apicem plerumque leniter constricto, ± 58 × 3.5 mm.—Carne inodora.—Sporis (5.5)–7.5–9.5 × 3.5–4 μ, frequentius 8–8.5 × 3.7 μ, oblongo-subcylindraceis, levibus, inamyloideis.—Hymenio basidiis consistente 32–45 × 6.5–7.5 μ,

tetrasporis ; cystidiis nullis, sed interdum videntur filamenta hymenialia inter basidia, nonnulla bifurcata, semper sparsis.—Hyphis fibulatis, inamyloideis, in tramate hymenophorali regulari hyalinis, densis, parallelis vel subparallelis, multiseptatis, haud gelatinosis.—Epicute pilei hyphali ex hyphis repentibus vel leniter ascendentibus filamentosis efformata, ut minimum in parte exteriore fortiter gelatinosa.—In uliginosis sub Pilgerodendris, Nothofagis betuloideis, antarcticis, Fitzroyis. Typus tantum conservatus (BAFC).

Material studied: CHILE : Valdivia : Cordillera Pelada, Mirador, 1000 m alt. 5–V–1965, Singer M 5516 (BAFC).

This species is apparently close to *H. insipida* but is not similar in appearance to the figure published by Lange ; aside from the habit, spores and habitat are also different.

Hygrocybe subheteromorpha Sing. spec. nov.—Pileo rubro (3–L–5, "Chianti", "Afgan" M & P), glabro, viscoso, convexo vel convexo-campanulato, 3–9 mm lato.—Lamellis rubris vel salmoneo-roseis (3–G-11, M & P), ad aciem pallide aurantiacis vel luteis, subconfertis vel subdistantibus, haud decurrentibus, sed adnatis vel adnexis, planis vel subventricosis in parte externa, subarcuatis vel horizontalibus.—Stipite rubro (3–L–5) vel flavo ("Spanish y." M & P), ad basin interdum pallide aurantiaco, glabro et levi, glutinoso vel viscido, ad apicem gradatim subattenuato, 3–12 × 1–2 mm.—Contexto inodoro.—Sporis 7.5–9 × 4.5–6.3 μ, levibus, hyalinis, membranis homogeneis instructis, ellipsoideis, depressione suprahilari destitutis vel applanatione suprahilari instructis.—Hymenio e basidiis et cellulis cystidiformibus consistente ; basidiis (20) 30–56.5 × 7.5–11.3 μ, 1–2–3–4–sporis, plerumque bisporis, clavatis ; cystidiis ad marginem (aciem) lamellarum, interdum aequaliter sed rarissime extra aciem dispersis, 35–85.5 × 1.3–10.5 μ, versiformibus sed praesertim ad basin vel in centro ventricosis et supra filamentosis, apice saepe subcapitulatis vel clavicularibus et tunc interdum appendiculatis apiculis uno vel duobus sterigmatoideis, raro capitello altero superimposito ; acie lamellarum haud heteromorpha (basidiis intermixtis).—Hyphis fibulatis, in tramate hymenophorali regulari, hyalino, non gelatinoso cylindraceis vel ventricosis, parallelis, elongatis, 3.5–12 μ latis.—Epicute supra hyphas tramatis (quae eis tramatis hymenophoralis simillimae sunt) ex ixocute (hyphis laxis, flexuosis, tenuibus, horizontalibis vel leniter ascendantibus) consistente, in KOH hyalina.—Ad terram humidam in silva, locis umbrosis. Typus (M 7818) in SGO conservatur.

Material studied : CHILE : Concepción : Boca del Bio-Bio, 17–XI–1967, Singer M 7818 (SGO), typus.—Llanquihue ; Peulla, 22–III–1959, Singer M 2000 (LIL).

This species is characterized by the cheilocystidia, the colors, non-decurrent lamellae, small size, and structure of the hyphae of the glutinous epicutis. It thus differs from all other species of *Hygrocybe* with both pileus and stipe surfaces strongly gelatinized.

HYGROCYBE SCIOPHANA (Fr.) Karst., Hattsv. p. 233. 1879.
Hygrophorus sciophanus Fr., Syst. Mycol. 1: 102. 1821.
Hygrophorus perplexus Smith & Hesler, Sydowia 8 : 328. 1954.

Pileus latericious ("Kobe", "Egyptian r.", "chinook" to "tarragona", "persimmon" [M & P], in buttons sometimes even more brown), or rather a pink with darker shades (e.gr. "Mephisto" M & P), subhygrophanous and fading to yellow ("deep chrome y." M & P), on drying in the dryer, like the whole carpophore, becoming salmon to fire orange, not striate or becoming up to one half of the radius transparently striate, glabrous, glutinous, convex and obtuse, or with a rather low obtuse umbo, 11–21 mm broad.—Lamellae yellow, more rarely pink (a salmon pink or "Grecian pink" (M & P), always either yellow or pink at the edges, but further inside invaded by gray, fumosous, or reddish latericious shades in most specimens, on drying like the pileus, broad, more or less ventricose, rarely irregularly anastomosing, subclose to mostly subdistant, rounded and narrowly adnexed, broadly adnexed or even adnate, frequently with a decurrent tooth.—Stipe orange, yellow, or concolorous with the pileus, with mostly darkened, rarely lilac (55–C–7 M & P), but generally luridous, gray, livid gray apex, entirely concolorous with the pileus when dried, smooth, glabrous, generally equal or subequal, more rarely attenuated upwards or downwards, hollow, 25–40 × 3–4.5 mm.—Context white, towards surfaces concolorous with the latter, inodorous, mild.

Spores 7.2–10.2 × 4.3–7 μ, varying from half as broad as long to much broader, oblong to mostly ellipsoid, with thin homogeneous wall, hyaline, without suprahilar depression or applanation, or with an indistinct one, smooth, inamyloid.—Basidia 40–58 × 8–10.2 μ, mostly predominantly 4-spored, or all 4-spored, sometimes some few 2–3-spored ones intermixed ; cheilocystidia and cystidia none, or else very few and scattered filamentous hyphal ends entering the hymenium or the edge region.—Hyphae with clamp connections, in the subregular hymenophoral trama hyaline, almost parallel, inequal in diameter ; no gelatinized hymenopodium differentiated.—Epicutis of pileus an ixotrichodermium or erect to ascendant but not parallel thin-filamentous hyphae which are imbedded in a gelatinous mass, forming a broad layer in which the uppermost hyphal ends are frequently appressed ; a gelatinized layer can also be demonstrated on the surface of the stipe.

On the ground among herbs and grasses or on naked humus in the

shade of trees, more rarely outside the woods, solitary or in groups, fruiting from spring until fall.

Material studied : ARGENTINA : Tierra del Fuego : Lago Fagnano, 19–II–1950, Singer M 363 (LIL).—Neuquén : Quetrihué, "Los Arrayanes", 21–IV–1965, Singer M 5122 (BAFC).—CHILE : El Frutillar, prov. Llanquihue, 15/16–IX–1967, Singer M 7549, M 7557 (SGO).—U.S.A. : Michigan : Douglas Lake, 18–VI–1952, Singer N 16 (F).—Pellston Hills, 28–VI–1952, Singer N 255 (F).—Mackinaw City Hardwoods, 6–VII–1952, Singer N 418 (F).

M 363 has been separately described by this author (Sydowia 6 : 173. 1952). N 16 came from the same station as the type of *Hygrophorus perplexus* Sm. & Hesl. The present interpretation of *Agaricus sciophanus* Fr. is undoubtedly identical with this North American species. The spore measurements on the American material are slightly lower than in the European and South American specimens ; the olive hue sometimes observed on North American and European specimens has not been observed in our region, and, vice versa, the pinkish tones on the lamellae observed in some South American specimens have not been mentioned in descriptions of collections from the Northern Hemisphere. The decurrent tooth often observed in our specimens may account for the "lamellae decurrentes" mentioned by Fries, an error apparently later corrected (1863).

Hygrocybe proteus Sing. spec. nov.—Pileo lividobrunneo vel rubidobrunneo vel livido-fusco ("kermanshaw", "racquet", "winterleaf", "cattail", ad marginem interdum "cocoa"), partim rosascente vel aeruginascente vel grisente, ("blush", 31–A–6, 15–E–6, M & P), siccando aurantio-ferruginascente vel rosaceo-aurantiaco (e. gr. "tile r.", 10–C–10, "melon"), convexo, demum plerumque partim applanato vel centro depresso, obtuso, glabro, interdum transparenter substriatello, glutinoso, 9–28 mm lato.—Lamellis albis vel cremeis (albis vel "Leghorn" M & P), siccando interdum rosellis (2–A–10, M & P), angustis vel subangustis, distantibus, adnexis vel decurrentibus, siccis semper dente decurrente notato, arcuatis vel planis.—Stipite grisello vel grisello-livido ("pastel, parchment", "sheepskin", M & P) ad apicem, lurido (12–G–5) vel luteo ("spanish y.") in parte media, luteo ("spanish y.") vel cremeo ("Vanilla" M & P) in parte basali, glabro, levi, glutinoso, subaequali, sed ad basin saepe attenuato, 18–57 × 2–4.5 mm.—Contexto albo, inodoro.—Sporis 5.5–9 × 4–5.5 μ, plerumque ellipsoideis, tenuitunicatis, levibus, hyalinis, una vel pluribus guttulis repletis.—Hymenio e basidiis consistente et nonnullis cheilocystidiis marginato ; basidiis 38–42 × 7–8 μ, tetrasporis, interdum nonnullis bisporis intermixtis, clavitis ; cheilocystidiis 2 μ latis,

filamentosis, longiusculis, apice frequenter claviculatis.—Hyphis parce fibulatis (basibus basidiorum maiore ex parte fibulatis), in subhymenio et tramate hymenophorali regulari vix vel paullum gelatinisatis, hyalinis.—Epicute pilei ixotrichodemium constituente; tegumento stipitis etiam gelatinoso.—Ad terram et humum in silvis nothofagineis (*Nothofagus betuloides, N. obliqua, N. alpina, N. dombeyi*), gregatim vel solitario, verne et autumno. Typus (M 6560) in SGO conservatur.

Material studied : CHILE : Valdivia : Cordillera Pelada, Mirador, 30–IV–1967, Singer M 6560 (typus, SGO).—Cuesta Sta. Elvira, 11–IX–1967, Singer M 7348 (SGO).

This species is very closely related to both *H. sciophana* and *H. laeta*. Typical material of the latter has never been discovered in the Southern region. It differs from our new species in the colors, somewhat smaller size, somewhat larger spores, initially sometimes adnexed lamellae, from *H. sciophana* in the paler or white lamellae, more numerous cheilocystidia and in mature specimens more decidedly decurrent lamellae, which are also somewhat narrower. Like in both these species, *H. proteus* becomes entirely salmon orange when dried.

The complex of *H. laeta* and allied forms is at present extremely difficult to break up into taxonomical units. In Central Argentina and Uruguay there is another form, different from the typical form described by Hesler & Smith (l.c. p. 228–232), characterized by a tendency to show a faintly heterogenous wall in the somewhat larger spores and more bright red juvenile forms : *H. arechavaletii*. Since the only form with dark pileus and pallid lamellae is also the only one found in our region, we have given it specific rank even though, in final analysis, it might be merely a "variety" of *H. laeta*.

Hygrocybe octayensis Sing. spec. nov.—Pileo laete flavo, siccato flavo, glabro, per 4/5 radii pellucide striato, viscoso, hygrophano, convexo, obtuso, plus minusve 11 mm lato.—Lamellis flavis ("light chrome", M & P), partim pallidioribus, didymis, latis, haud intervenosis, 2.5 mm latis, arcuatis, decurrentibus.—Stipite concolori, glabro, levi, glutinoso, aequali, ± 16 × 1.2 mm ; mycelio basali fibrilloso, albo.—Contexto flavo, immutabili, inodoro, miti, molli-carnoso.—Sporis 8.5–10.5 × 4.5–5.5 µ, ellipsoideis vel cylindraceis, hyalinis vel intus pallide flavidellis, levibus, inamyloideis.—Hymenio basidiis consistente cheilocystidiisque marginato ; basidiis (33)–42–50 × 7.2–8.5 µ, (2)–4-sporis, clavatis, fibula basali instructis ; cystidiis nullis ; cheilocystidiis numerosis, 21–45 × 2.3–4 µ, subgelatinosis, filamentosis, fibulatis ad basin.—Hyphis fibulatis, in tramate hymenophorali regulari subparallelis, nonnullis filamentosis (± 3 µ latis), aliis tumescentibus (usque ad 15–20 µ latis), haud gelatinosis.—

Epicute pilei paullum differentiata, sulphuro-flavo in NH_4OH et KOH pigmenti intracellularis dissoluti causa, hyphis ixocutem formantibus, 3 μ latis, omnibus inamyloideis.—Ad truncum in silva Aextoxici, Perseae, Laureliae, Gevuinae, Eucryphiae. Vernalis ! Typus solum in Chile, prov. Osorno, Puerto Octay, 15–IX–1967, a R. Singer, no. M 7538, lectus et conservatus in SGO.

This rare and easily recognizable species differs from *H. hondurensis* in larger spores and the characteristic habitat.

HYGROCYBE HURONENSIS (Smith & Hesler) Sing., Lilloa 22 : 153. 1951.

Hygrophorus huronensis Sm. & Hesl., Lloydia 5 : 59. 1942.

Since our South American form differs slightly from the type in having larger carpophores, although otherwise everything is in agreement with the orginal description, we describe our material :

Pileus white, subhygrophanous and subviscid to viscid, smooth or slightly rugulose, glabrous, convex, later depressed around the center, with a tendency to develop an uplifted margin or to become entirely flat, 32–59 mm broad.—Lamellae white, sometimes in age anastomosing, moderately close to subdistant, broad or medium broad (3.5–7.5 mm broad), rounded or emarginate.—Stipe white, glabrous, smooth, dry, solid, becoming stuffed, subequal, 35–62 × 5–9.5 mm.—Context white, unchanging, inodorous.

Spores 7–9 × 4.5–5.5 μ, guttiform or nearly ellipsoid, hyaline, smooth, thin-walled, with or without a suprahilar depression, inamyloid.—Basidia (30)–37–56–(62) × 7–7.5 μ, 4-spored, clavate, few sometimes 2–3-spored. —Cystidia and cheilocystidia none.—Hymenophoral trama regular.—Epicutis formed by thin wavy filamentous hyphae, forming an ixocutis but moderately broad and moderately strongly gelatinized. No gelatinized layer on the surface of the stipe. Hyphae with clamp connections.

On the ground under *Nothofagus dombeyi*. Fall-fruiting. ARGENTINA : Neuquén : Quetrihué, 14–V–1952, Singer M 587 ; 19–V–1952, Singer M 765, both LIL.

The absence of *Hygrocybe flavescens* from our flora would suggest that this has nothing to do with the otherwise extremely similar albino forms of *H. flavescens*. In Patagonia, this may at times be difficult to distinguish from *Camarophyllus cremeus* and *Porpoloma*-forms washed out by the rains, but microscopically there will be no trouble in separating them.

HYGROCYBE SINGERI (Smith & Hesler) Singer var. *albifolia* (Hesler & Smith) Sing. comb. nov.

Hygrophorus singeri var. *albifolius* Hesler & Smith, North Am. Spec. Hygr. p. 217.

Pileus yellow, blackening, viscid, conic, 25–56 mm broad.—Lamellae stramineous-white, blackening, rather broad, subdistant, at first ascending, adnexed.—Stipe yellow with white base, blackening, subviscid when collected, equal, 70–85 × 5–10 mm.—Context whitish, inodorous.

Spores 9–11.5 × 5–6.3 μ, ellipsoid to more often oblong, smooth, hyaline.—Basidia up to 45 μ long, without basal clamp, 2-spored. Cystidia none.—Hyphae without clamp connections, very broad in the relular gill trama, parallel.—There is a gelatinized zone on the pileus as well as on the surface of the stipe where it is 10–12 μ thick, whith hyphae about 1 μ thick.

On the ground in mixed forest (*Austrocedrus* and *Nothofagus dombeyi*).

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 22–IV–1964, Singer M 3406 (BAFC).

HYGROCYBE CONICA (Scop. ex Fr.) Karst. (ut *Hydrocybe*), Bidr. Finl. Nat. Folk 32 : 236. 1979.

Agaricus conicus Scop. ex Fr., Syst. Mycol. 1 : 103. 1821.
Hygrophorus conicus (Scop. ex Fr.) Fr., Epicr. p. 331. 1838.
Godfrinia conica (Scop. ex Fr.) Maire, Bull. Soc. Myc. Fr. 18 (suppl.) : 117. 1902.
Hygrophorus patagonicus Speg. ex Horak, Darwiniana 14 : 370. 1967.

We have observed a large form of the general habit of *H. tristis* ss. Bresadola, with mixed 2- and 4-spored basidia, and spores 9.5–13.2 × 5–7.5 μ in relict forests of Central Chile. Here, the pileus color is "primrose" with "tile r." or "carrot red" margin (M & P), but there is also a yellow form with "ta ming", later "amber y" (M & P) pileus, and an albino without any pigment. In the Australian subantarctic region (Macquarie Island) we have a similar form, but all 4-spored, with the general habit of *H. nigrescens* Quél. In this latter the spores are relatively broad, 8.8–11.7 × 6.2–8.8 μ ; only in one carpophore were some very few 2-spored basidia observed, and the spores produced by these are about 12.7 × 7 μ. We call this form var. *antarctica* ad int.—In Patagonia (Carren leofú, leg. Illin, January 1900, LPS no. 2874, two packages) a small narrowly conic form with pileus "rubrolutescens" was observed and validly published by Horak, l.c. Here, the spores are all over 10 μ long and up to 6.6 μ broad, the basidia are said to be 2-spored ; clamp connections present (which excludes *H. singeri* var. *albifolia*). The ma-

terial is now completely blackened. There is no doubt in my mind but that this is a form of *H. conica*. A complete description of the forms combined into Smith's broad conception of this species can be found in Hesler & Smith, l.c. pp. 109–114, fig. 27, 28.

Hygrocybe chilensis Sing. spec. nov.—Pileo rubro ("buccaneer" M & P), ad marginem aurantio-ferrugineo ("mosque" M & P), dein rubido ("Brazil r."), ad marginem fulvoaurantiaco ("spa-tan"), demum aurantiaco (10–C–9), ad marginem 11–H–12 (M & P), striis pellucidis marginalibus brevibus flavo-brunneis ("spruce ornato"), hygrophano, siccitate pallescente (usque ad 10–E–2 vel "cornsilk" M & P), apparenter levi in humidis sed furfuraceo-fibrilloso-scabriusculo in statu dehydratato, haud viscoso, margine primitus incurvato, convexo, mox centro depresso, 10–38 mm lato.—Lamellis rubido-grisello-lividis (prope "touquet" demum 5–B–8), rarius demum dilute flavidis vel flavis, latis, distantibus, arcuatis, decurrentibus.—Stipite rubido-aurantiaco ("Mandarin r.", dein "burnt orange" M & P), haud viscoso, levi, glabro, farcto dein cavo, aequali sed tertia supera aut infera parte tenuiore, centrali vel raro subexcentrico, 30–32 × 2–8 mm ; mycelio basali albo.—Contexto falvido, prope superficiem haec concolori, in stipite dissiliente ; odore nullo ; sapore miti.—Sporis (5.5)8–10.7 × 3.2–5.5 μ (interdum microsporis 5.5–8 × 3.2–4 μ et macrosporis 8–10.7 × 3.3–5.5–(6) μ distinguibilibus), levibus, hyalinis, plurimis guttulis vel una gutta amorpha instructis, ovoideo-oblongis vel subcylindraceis, interdum ellipsoideis, inamyloideis.—Hymenio : Basidiis 18–45 × 4.5–6.5 μ, aut (1)–2–(4)-sporis aut (1)–2–(3)–4-sporis vel omnibus fere tetrasporis. Cystidiis plerumque nullis, sed interdum paucis vesiculosis parvis (e. gr. 23 × 9.5 μ) praesentibus ; cheilocystidiis nullis vel sparsis et tunc plerumque excrescentiis ramosis gaudentibus.—Hyphis fibulatis, inamyloideis, in tramate hymenophorali regulari axialiter dispositis sed subparallelis vel subintertextis, hyalinis, elongatioribus vel filiformibus.—Epicute ex hyphis repentibus haud gelatinisatis tenuiusculis, parallelis vel subparallelis, levibus efformata ; in stipitis tegumento stratum gelatinosum abest.—Ad solum silvestrem inter quisquilias Chusquearum, M 1916 typus est et in SGO conservatur.

Material studied : CHILE : Llanquihue : Peulla, 400 m alt., 20–III–1959, Singer M 1916 (typus)—M 1917, both at SGO.

Hygrocybe blestiana Sing. spec. nov.—Pileo flavo et rubro variegato ("totem" + " 10–H–4, M & P), dein toto flavo, primum levi et estriato, dein leniter pellucide striatulo, striis per quintam partem radii percurrentibus, obtuso, glabro, neque umbilicato neque umbonato, neque hygrophano nec viscoso, 13–18 mm lato – Lamellis lilaceis (42–D–3 vel 42–B–2, M & P), siccando lutescentibus, subdistantibus, arcuatis, didymis, sub-

decurrentibus.—Stipite ad apicem rubro ("totem" M & P), ad basin flavescente (10–H–4), glabro, levi, haud viscoso, aequali vel subincrassato in parte media, 29–32 × 3–5 mm ; mycelio basali sparso, albo.—Contexto flavido-albo vel flavescente, inodoro.—Sporis 8–10.5 × 4–5.5 μ, cylindraceis, vel ellipsoideis vel oblongis, hyalinis, levibus, guttula vel guttulis olei repletis, inamyloideis.—Hymenio e basidiis tantum consistente ; his 40–64 × 6–9.5 μ, tetrasporis. Cystidiis et cheilocystidiis nullis.—Hyphis fibulatis, inamyloideis, in tramate hymenophorali regulariter dispositis.—Epicute pilei paullum differentiata – cutem haud gelatinosam, ex hyphis filamentosis levibus efformatam confirgurante.—Inter muscos in silva. Typus in Argentina, Lago Nahuel Huapí, Brazo Blest, 23–III–1963 a Singer (M 3139) collectus et in SGO conservatus est.

This species differs from the preceding one principally in the smooth and glabrous, centrally not depressed pileus which is striate when mature, and the rare occurrence of less than 4 sterigmata on the basidia. Thus it would be closer to *H. coccinea* and its group than to the *H. miniata* group to which *H. chilensis* appears to belong. The exact color of the lamellae is also somewhat different being less clearly lilac in *H. chilensis*. Extralimital species with purplish, livid, or lilac lamellae are *H. purpureofolius* and *H. troyana* which are both described in Hesler & Smith, l.c. The former is a North American species which has smooth margin and is slightly larger than our *H. chilensis*, also described with slightly different colors, but otherwise rather near the latter, whereas *H. troyana* is more related to *H. blestiana* from which it differs in smaller carpophores and non-depressed pileus (but Dennis found what he considered the same species but with pileus up to 25 mm broad, and the lamellae salmon-orange), and spores which never reach the size observed by us for *H. blestiana*, or *H. chilensis*. Although some of the species of the Hygropharaceae are surprising for the phytogeographer because of their wide distribution, the morphological differences between the two pairs of livid-gilled species are too noticeable to assume identity. In fact, *H. purpureofolius* was described from birch-maple woods in Massachusetts, and *H. troyana* from Jamaica by Murrill, both from localities very different from those found in northwestern Patagonia and Southern Chile. Under these circumstances we cannot help but consider our species autonomous and new.

Hygrocybe lateritiorosella Sing. spec. nov.—Pileo lateritio-roseo et colore Laccariam in mentem revocante, fibrilloso, praesertim in centro, 4–6 mm lato, haud viscido.—Stipite concolori, aequali, sicco, glabro, gracili, 10–12 × 1–2 mm.—Lamellis adnato-subdecurrentibus, latis, admodum distantibus, crassiusculis subobtusisque, concoloribus.—Carne

mediocriter crassa, concolori, subinodora.—Sporis 4.5–5.5 × 4–4.5 μ, subglobosis vel breviter ellipsoideis, membrana levi, hyalina, inamyloidea, homogenea instructis.—Hymenio e basidiis tantum formato, eis tetrasporis, clavatis, 27–33 × 5.5–6 μ ; cystidiis cheilocystidisque nullis, sed (an ubi fractis in vivo ?) pilis cheilocystidiiformibus densis filamentosis et nonumquam basi incrassatis vel ampullaceis vel claviformibus 20–37 × 2.5–4 μ praesentibus.—Hyphis tramatis hymenophoralis regularis subintertextis, axialiter currentibus, haud gelatinois, 2–4 μ crassis, inamyloideis ; hyphis ommnibus fibulatis, granulis pseudoamyloideis in subhymenio visis et hymenium penetrantibus ; hyphis tramatis pilei latioribus, inamyloideis.—Epicute pilei structura cutis gaudente et ex cute hyphis piliformibus hinc inde nascentibus, 16–22 × 3 μ, ad basin frequenter usque ad 6 μ incrassatis, sparsis sed haud raris, haud gelatinosis ; superficie stipitis haud gelatinosa.—Inter Hepaticas loco humido, typus (SGO) a W. Lazo lectus prope Pumanque, provinciae Colchagua, Chile no. PU-54.

Hygrocybe striatella Sing. spec. nov.—Pileo 10–17 mm lato, convexo vel conico-convexo et obtuso haud umbonato vel subumbonato vel umbonato, demum interdum subconcavo, sicco vel subviscido, aurantiaco, interdum rubro (Brazil r. "Maerz & Paul") colorato, interdum ad marginem flavo ("Chinese y." M & P), centro demum aureo ("golden poppy" M & P), aut toto pallescente (in concavis), levi sed in adultis plerumque pellucide striatello per radii tertiam vel dimidiam partem, glabro.—Lamellis albis vel cremeo-albis, distantibus, adnato-decurrentibus, adnatis vel partim decurrentibus, moderatim latis.—Stipite rubro vel aurantiaco, plerumque magis rubro ad apicem, magis aurantiaco basim versus, glabro haud viscido, aequali vel basin versus incrassato, interdum basi acuminata et parte superiore flexuosa instructo, levi.—Carne subconcolori, miti, inodora.—Sporis 7.8–10.2 × 4–5.2 μ ovoideis vel cylindraceis vel ellipsoideis, nonnulllis centro leniter strangulatis, levibus, hyalinis, inamyloideis.—Hymenio e basidiis tantum consistente, eis tetrasporis, 30–60 × 7–10 μ.—Hyphis tramatis hymenophoralis subregulariter vel regulariter dispositis, fibulatis.—Epicute pilei sat reducta, consistente uno vel duobus stratis hypharum hyalinarum, haud vel paullum gelatinosarum, repentium, fibulatarum raro hinc inde hyphae terminatione ascendente, obtusa vel claviformi ; stipitis strato externo haud gelatinisato.—Sub Myrtaceis, *Aextoxico, Fitzroya, Eucryphia,* interdum inter muscos, vel ad terram humosam vel arenosam nudam, gregatim vel solitario ; typus (SGO) a R. Singer lectus prope Hueycolla, provinciae Valdivia, Chile, 4–V–1967, no. M 6732.—Paratypi : M 5115, Quetrihué, prov. Neuquén, Argentina ; no. M 6558, Mirador, prov. Valdivia, Chile ; PU-110, Pumanque, prov. Colchagua, Chile, Leg. W. Lazo.

HYGROCYBE ROSEA Murr. (ut Hydrocybe), Mycologia 3 : 197. 1911.
Hygrophorus roseus (Murr.) Murr., Mycologia 4 : 332. 1912.

Pileus bright rose color (2–J–5, 2–K–6, M & P) to bright red, glabrous even under a lens when dehydrated, not viscid, transparently striate over half of the radius, but not sulcate, convex, depressed in the center, eventually flattened, 8–11 mm broad.—Lamellae at first white with red or pinkish red ground, later or perhaps also from the beginning on cream ground, then gradually and sometimes unevenly more concolorous with the pileus and only the edge remaining at times pale yellowish or lamellar interspaces becoming pale yellowish, medium broad or narrow, and in the latter case relatively thick and obtuse, distant, broadly adnate and partly subdecurrent, not clearly decurrent while fresh but appearing so in the dried material, not ventricose.—Stipe concolorous with the pileus, with yellowish or pale yellowish base, more rarely with concolorous base, equal but sometimes curved, or sligthly constricted at the base, glabrous, smooth, not viscid, 8–14 × 1–1.3 mm.—Context reddish or pale pinkish, inodorous.

Spores 8–11 × 5.5–8.5 μ ellipsoid, broadly ellipsoid, smooth, hyaline, inamyloid, with homogenous wall, with ellipsoid or round oil drop.—Hymenium consisting of basidia 23–63 × 6.5–11 μ, either all 4-spored, or mixed 2–(3)–4-spored, with, very few without a basal clamp. Cheilocystidia and cystidia none, but basidioles at times vaguely ampullaceous or with wavychlindric shape, 25–32 × 5–6.5 μ and perhaps remaining sterile in certain specimens.—Hyphae with clamp connections, but some (secondary) septa clamp-less. Hymenophoral trama pale yellow to deep chrome yellow in KOH, regular, its hyphae not gelatinized, slightly interwoven to subparallel.—Epicutis of pileus little developed, the surface hyphae pale yellowish to orange and filamentous, smooth, not gelatinized, strictly repent. Below this, the trama of the pileus and stipe constisting of rather broad (7–10 μ) and slightly interwoven (in pileus), inamyloid hyphae which may reach the surface. Stipe also without gelatinous outer layer.

On wood of trees.

Material studied : CHILE : Llanquihue : 10 km north of Colaco, 9–V–1967, Singer M 6818 (SGO).—COLOMBIA : Boyacá : Arcabuco, 28–VII–1960, Singer B 3572 (BAFC).

The Colombian and Chilean material being evidently identical, we have no doubt but that *H. rosea* is a characteristic small pink to red lignicolous species with rather large spores and no surface gelatinization, and a wide area of distribution from the tropical montane zone to the temperate high-precipitation zone of Southern Chile. We have not seen

the type from Sir John Peak, 6000 ft. elevation, Jamaica, W. I., and rely on the type analysis published by Hesler & Smith, l.c. p. 180.

HYGROCYBE MARCHII (Bres.) Sing., Lilloa 22 : 209. 1951.

Hygrophorus marchii Bres., Icon. Mycol. 7 : 343. 1928.

We find three forms or varieties in our region which all coincide basicaly with the type description, and for which we would not, at present, propose separate taxa. They agree with three interpretations of Bresadola's species in the Northern Hemispere, and are briefly characterized below :

H. MARCHII sensu Orton, Trans. Brit. Myc. Soc. 43 : 252. 1960.

Pileus when mature over one half of the radius transparently striate ; spores 6.5–8.5–(10) × 4–5.5–(6) μ, not constricted in the middle ; epicutis of the pileus a thin layer (up to 40 μ) of filamentous hyphae which are either gelatinized or scarcely gelatinized when revived in warm KOH.

Material studied : CHILE : Valdivia : Cuesta Sta. Elvira, 15–V–1967, Singer M 6918 (SGO).—Chivería (Cordillera Pelada), 10–V–1965, Singer M 5719 (SGO).

Since Orton compares this fungus with his *H. strangulatus* (which we have observed in Central Chile) and does not enumerate the striation as a distinguishing character of this and *H. marchii,* we believe that the mature *H. marchii* as characterized by this author has likewise striate pileus when wet.

H. MARCHII sensu Favre, Champ. Sup. P. Nat. Suisse, Res. sc. P. Nat. Suisse 5(33) : 35. 1955 : Møller, Fungi Faeröes 1 : 152. 1945.

Pileus generally campanulate-convex, then convex (like fig. 12, Favre l.c. p. 34), not striate ; spores 6.5–8.8–(10) × 4.3–5 μ, not or extremely rarely and slightly constricted in the middle ; epicutis of pileus not or very slightly gelatinized in an intermittent layer and here often with short obliquely erect outgrowths but these very scattered.

Material studied : CHILE : Valdivia : Mirador, 1000 m alt., 30–IV–1967, Singer M 6552 (SGO).

H. MARCHII sensu Hesler & Smith, l.c. p. 209.

Pileus margin tending to become uplifted, not striate, sometimes umbonate ; spores oblong to cylindric, and often (although by far not all) slightly constricted in the middle, 8.8–10.2 × 4.3–5 μ ; epicutis of pileus only in the outermost layer slightly to distinctly gelatinized, the gelatinized layer thin and at times intermittent.

Material studied : ARGENTINA : Neuquén : Los Cántaros, 28–IV–1965. Singer M 5333 (BAF)—M 5334 (BAFC).

Bresadola's original description and plate appears to be closest to *H. marchii* sensu Favre, Møller.

Humidicutis

Humidicutis rosella (Speg.) Sing. comb. nov.

Tricholoma rosellum Speg., Bol. Ac. Nac. Cordoba 28 : 279. 1926.

Pileus near "onion skin pink" and somewhat dirtied with "brick r." (M & P), smooth, glabrous, not viscid, convex, at first subpulvinate, up to 37 mm broad.—Lamellae white, thickish-ceraceous, subclose, broad, rounded-adnexed to narrowly adnexed, with entire white edge.—Stipe whitish-cream-pink, very pallid and glabrous, smooth, somewhat shorter to somewhat longer than the diameter of the pileus, slightly ventricose or slightly attenuated downwards, 10–15 mm broad.—Context white or whitish, rather firm and almost hard when fresh, unchanging ; odor none.

Spores 4–6–(8.5) × 3–4–(6) μ, ellipsoid, smooth, with thin wall and 1–2 round oil droplets, hyaline, inamyloid.—Hymenium consisting of basidia which are 31–45 × 4.5–6.2–(8) μ, 4-spored ; among the basidia there are numerous filamentous often flexuous or apically broadened to narrowly ventricose elements, perhaps cystidioles.—Hyphae without clamp connections, inamyloid, in the hymenophoral trama hyaline to palest stramineous, inamyloid, without clamp connections, parallel to subparallel, thinwalled, not gelatinized, around 5 μ broad.—Epicutis of the pileus little differentiated from the trama, a cutis with some occasional ascending hyphal ends, which are broadly rounded or a little irregular and always narrow, the repent elements mostly around 5 μ broad, but some 1–11 μ broad.

On the soil among fallen leaves of trees, fruiting in winter.

Material studied : CHILE : Colchagua : Pumanque, 8–VIII–1967, W. Lazo PU-140 (SGO).—ARGENTINA: Buenos Aires, La Plata, 6–IV–1919 (LPS), typus.

As for the type see Singer, Lilloa 23 : 173. 1951.

The species has not thus far been observed in the Southern region proper but its wide distribution and rare occurrence make one suspect that its southern limit might include at least some of the relict woods of Chile. It may have been adventicious in the province of Buenos Aires.

Lyophyllum

LYOPHYLLUM FUMOSUM (Pers. ex Fr.) Kühner & Romagnesi, ex Orton, Trans. Brit. Myc. Soc. 43 : 178. 1960.

Agaricus fumosus Pers. ex Fr., Syst. Mycol. 1 : 88. 1821 [1]).

This well-known species, in an abundant collection, agreed perfectly with the northern form, but does not appear to be common in our region.

Material studied: ARGENTINA : Neuquén : Río Pichi Traful, 15–IV–1965, Singer M 4069 (BAFC).—U.S.S.R. : Leningrad obl., Leningrad, 15–X–1938, Singer 5–429 (LE).—FINNLAND, Kellomäki, 5–IX–1940, Singer 5–790 (LE).—U.S.A. : New York : Huntington Forest, 10–IX–1941, Singer HF 95.—17–IX–1941, Singer HF 95b, both FH.

Lyophyllum langei Sing. spec. nov.—Pileo subfuligineo ("Sphinx", "Broncho", "mummy"), hygrophano, pallescente (usque ad murinum : "Chukker br.", "Arizona", "yellow beige" vel usque ad pallidum), in humidis maturis breviter (usque ad tertiam radii vel minus) pellucide striato, interdum sulculato, glabro, convexo vel subcampanulato, dein circum centrum applanato vel rarius toto subapplanato, subumbonato vel umbonato, 9–25 mm lato.—Lamellis griseis ("racquet", "Sphinx" M & P), saepius acie albidis vel pallidis vel pallidioribus, interdum crispis, moderate latiusculis vel latis, ascendantibus vel horizontalibus, confertis, subconfertis, interdum ventricosis, adnexis, rotundatis, sinuatis, interdum angustissime adnexis.—Stipite lamellis vel pileo concolori, vel "stag" in parte superiore atque 15–H–12 (M & P) in parte inferiore, apicem versus plerumque plus minusve pallidiore, toto glabro et nudo, haud vel vix radicante, aequali vel subaequali aut apicem aut basin versus attenuato aut apicem versus tantum aut basin versus tantum attenuato, farcto, dein cavo, 16–54 × 1–4.5 mm ; mycelio basali albo.—Contexto subconcolori, sed plerumque pallidiore quam superficies ; odore farinaceo sed interdum subnullo vel piscino ; sapore farinaceo.—Sporis 6.5–9 × 3.5–5 μ, ellipsoideis, depressione suprahilari plus minusve notabili, levibus, inamyloideis, tenuitunicatis, demum saepe subtenuitunicatis, hyalinis, guttula elongata vel guttulis parvis plurimis instructis.—Hymenio e basidiis efformato, his 27–35 × 6–9 μ, granulatione carminophila et fibula basali instructis ; cystidiis nullis ; cheilocystidiis interdum notatis, sparsis, hymenium in

[1]) For a complete list of synonmys see Dennis, Orton & Hora, New Check List of British Agarics and Boleti, Suppl. Trans Brit. Mycol. Soc., Cambridge Un. Pr. 1960, p. 109.

regione acieis perforantibus, filiformibus, usque ad 50 × 3 μ, inconspicuis.—Hyphis fibulatis, inamyloideis, in tramate hymenophorali sublatiusculis vel filiformibus, regulariter dispositis.—Epicute pilei hyphis densis appressis filamentosis, levibus efformata, pigmento incrustante destitutis, haud gelatinosis, gradatim ad hyphas tramales transeuntibus, ubi latioribus vel magis irregularibus, radialiter dispositis.—Ad terram et humum sub arboribus frondosis (Nothofagus, Laurelia) vel coniferis (Austrocedrus). Typus (M 3384) in BAFC depositus est.

Material studied : ARGENTINA : Neuquén : "Cerro Cortinario" above Puerto Manzano, 11–IV–1963, Singer M 3384 (BAFC), typus.—Arroyo Frutillas, 9–IV–1963, Singer M 3358 (BAFC).—20–IV–1965, Singer M 5107 (BAFC).—Lago Nahuel Huapí, near Santa María, 19–IV–1965, Singer M 5069 (BAFC).—Puerto Manzano, 22–IV–1964, Singer M 3438b (BAFC).—CHILE : Valdivia : Fundo Universitario, 13–IX–1967, Singer M 7406 (SGO).

This species may be compared with *C. murina* sensu Lange from which it differs in the completely glabrous stipe, even at the apex and under a lens. It is close to *L. boudieri* from which it likewise, among other characteristics, differs by the glabrous stipe. This is the most frequent species of *Lyophyllum* observed in the woods of Patagonia.

LYOPHYLLUM MEPHITICUM (Fr.) Sing., Lilloa 22 : 166. 1951.

Agaricus mephiticus Fr., Epicr. p. 96. 1938.

Pileus grayish pallid, subtomentose, eventually rivulose, and pallid, convex, eventually concave, obtuse or umbonate, 3–9 mm broad.—Lamellae pale grayish argillaceous, later argillaceous, close, later subclose, rather broad to broad, adnexed.—Stipe gray, later dirty brown, strongly white pruinate all over, equal, central, later sometimes slightly eccentric, 3–8 × 0.5–1.5 mm, rising from a whitish woolly-fleshy extensive mycelial crust where several primordia are formed.—Context sordid-pallid in the pileus, sordid brown in the stipe.

Spores 4.3–5 × 3 μ, short ellipsoid, smooth or very faintly roughish, hyaline, inamyloid.—Hymenium consisting of basidia, these 15 × 5–5.2 μ, 4-spored, with carminophilous granulation ; cystidia and cheilocystidia none. Hyphae of the regular hymenophoral trama hyaline in KOH, all inamyloid, with clamp connections.—Epicutis of pileus and surface layer of stipe, both with filamentous appressed, hyaline, smooth hyphae.

On humus and earth in a woods of *Nothofagus dombeyi* with few individuals of *Austrocedrus chilensis* intermixed.

Material studied : ARGENTINA : Neuquén : Lago Correntoso, 16–IV–1965, Singer M 5013 (BAFC).

LYOPHYLLUM ANTHRACOPHILUM (Lasch) M. Lange & Sivertsen, Bot. Tidskr. 62: 208. 1966.

Agaricus anthracophilus, Lasch, Linnaea 4: 532. 1829. [1])

Our specimens, exactly as the many European collections made by us, have the pileus near "owl", the stipe near "bison" M & P, the spores globose, 5–5.8 μ in diameter, some seemingly uneven but merely with irregular wall thickenings, but occasionally there is a wart-like coarse excrescency here or there, inamyloid, with one large round oil drop ; basidia 4-spored, with basal clamp and carminophilous granulation, with a small hilar appendage remaining on the spores. Epicutis of pileus a cutis but with some ascendant or erect scattered excrescencies, hyphal ends, or knobs, these fuliginous, the pigment both intracellular and incrusting. On old fire places. ARGENTINA : Buenos Aires : Santa Catalina, 19–IV–1963, Singer S 401 (BAFC). For a complete description see Josserand, Bull. Soc. Mycol. Fr. 53 : 187. 1937 (as *Collybia ambusta*).

Lyophyllum nodulosporum Sing. spec. nov.—Pileo fuliginoso, "elk" (M & P), convexo, papillato, mox applanato vel depresso circum papillam, humido, glabro, per tertiam partem radii pellucide striato, 16–17 mm lato.—Lamellis griseis ("gray 31" M & P), subconfertis, subangustis vel latiusculis, adnexis vel adnato-subdecurrentibus (adnatis denteque leniter subdecurrente), di-tridymis, ad aciem integris.—Stipite griseo ("racquet" M & P), levi sed plus minusve subruguloso sub lente in siccis, sed neque sericello nec pruinato, subaequali vel lenissime basin versus subincrassato, 41–44 × 2–3 mm; basi in pseudorrhizam paullum evolutam brevem mycelio albo tectam protracta.—Contexto pallido, inodoro—Sporis 7–10.2 × 6–8.5 μ, junioribus guttiformi-subangulatis, mox substellatim sed haud semper regulariter protuberantiis obtusis (1.2–1.8 μ projicientibus) ornatis, hyalinis vel subhyalinis, inamyloideis.—Hymenio basidiis tantum formato, his 32–41 × 8.5–9.5 μ, multis ex eis granulatione carminophila forti repletis, ad basin fibulatis ; cystidiis cheilocystidiisque nullis.—Hyphis fibulatis, inamyloideis, in tramate hymenophorali hyalinis et plus minusve crasse tunicatis, 3–9 μ latis, membrana 1–1.5 μ crassa instructis, haud gelatinosis.—Epicute pilei ex hyphis subparallelis levibus 3–9 μ crassis, membrana subhyalina vel pallidissime fuscidula, debiliter pigmento incrustante fusco ornatis, cutem efformantibus.—Ad lignum putridissimum arena commixtum sparse, autumnalis.—Typus est M 6708 (SGO).

This species has neither the inconstantly uneven spores of the preceding species nor the finely spinulose spores of what M. Lange calls *Lyophyllum*

[1]) For a complete list of synonyms, see Lange & Sivertsen, l.c.

tylicolor (Fr. ex Fr.) Lange & Sivertsen, nor even the spores ornamented with large hemispheric gibbous excrescencies described in *Lyophyllum gibberosum* (J. Schäffer) M. Lange. It likewise differs from all these species macroscopically, and no sclerotia were seen.

Material studied : CHILE : Valdivia : Hueycolla, 4–V–1967, in mixed temperate rain forest near *Aextoxicum punctatum*, Singer M 6708 (SGO), typus.

Laccaria

As for the descriptive data on the species of *Laccaria,* Singer & Moser, Mycopath. & Mycol. Appl. 26 : 146–150, 1965 and Singer, Bull. Soc. Mycol. Fr. 83 : 104–123, 1967 should be consulted.

LACCARIA GALERINOIDES Sing., in Sing. & Moser, l.c. p. 147.
Description see there.

LACCARIA OHIENSIS (Mont.) Sing., Mycologia 38 : 688. 1946.
See Singer, BSMF 83, p. 117, including synonymy and table of material studied.

LACCARIA ECHINOSPERMA (Speg.) Sing., Ann. Mycol. 61 : 17. 1943.
Description see Singer, Sydowia 6 : 176. 1952.

LACCARIA PROXIMELLA Sing., in Sing. & Moser, l.c. p. 1946.
Description see there.

LACCARIA TETRASPORA Sing., Mycol. 38 : 689. 1946.
See there for var. *tetraspora.* As for the varieties, see Singer, Bull. Soc. Mycol. Fr. 83 : 112–117. 1967.

LACCARIA LACCATA (Scop. ex Fr.) Berk. & Br. var. *gibba* Sing. var. nov.

Pileo centro rubescente-brunneolo (inter "Arabian br." et "cocoa" M & P), ad marginem subcarneo (inter "auteuil" et 12–E–8), hygrophano, glabro, sicco sub lente innate appresseque subtiliter fibrilloso, per medium radium pellucide striato et sulcato, convexo, demum applanato, umbonato (umbone in siccis quoque persistente), 10–16 mm lato.—Lamellis roseis (inter "Japan rose" et "Cherub" M & Z), horizontalibus, adnatis vel adnato-de-currentibus, aut decurrentibus, latis, distantibus.—Stipite atro-rufo ("henna") sed apicem versus pallidiore, glabro in humidis, hygrophano, aequali vel apice angustiore, 45–50 × 2–2.5 mm ; mycelio basali

albido.—Contexto inodoro.—Sporis 8 × 5.5–7 μ vel 7.5 × 5.5–6.5 μ vel 8.5 × 7.2–7.5 μ vel 9–9.5 × 7.7–8.5 μ vel 9.8–10 × 8.5–8.8 μ (ornamentatione inclusa), i.e. 7.5–10 × 5.5–8.8 μ, spinulis 0.3–0.9 μ projicientibus, hyalinis, echinulatis, inamyloideis, globosis vel frequentius subglobosis aut breviter ellipsoideis.—Hymenio e basidiis perpaucisque cystidiis ad aciem praecipue lamellarum visis, inconspicuis subfilamentosis consistente; basidiis (1–2–3)4-sporis, 35–42 × 7.5–10 μ; hyphis inamyloideis, fibuliferis.—Ad plantas uliginicolas (*Agathis pumila, Umbelliferae, Sphagna* ramulum dejectum tegentia, etc.) sub *Nothofagis antarcticis,* nec non interdum *Fitzroya* loco aprico humidissimo. Typus (M 6738) in SGO conservatus est.

Material studied : CHILE : Valdivia ; Cordillera Pelada, 2 km south of Mirador, "Turbera Mimi", 6–V–1967, Singer M 6738 (SGO), typus.

This variety is somewhat intermediate between *Laccaria laccata* var. *laccata* and var. *anglica* Sing. From the former, it differs in the sulcate and umbonate pileus, and from the latter in the presence of numerous more strongly (up to two microns longer than broad) elongated spores which are also somewhat smaller, few cheilocystidia.

LACCARIA LACCATA (Scop. ex Fr.) Berk. & Br. var. *laccata.*

Description of the type variety see Singer, Bull. Soc. Mycol. Fr. 83 : 106. 1967. The forms observed in South Chile (M 6564 and M 5645) were both found in Sphagnetum or nearby on wet ground under *Nothofagus betuloides* and *N. antarctica* and *Fitzroya* and have convex, later subumbilicate or depressed pileus with rather glabrous, non-striate and smooth pileus ; spores 7–10.5 × 5.5–8.2 μ, very variable but always short-ellipsoid, with spinules 0.5–1.0–(1.5) μ long and stipe elongate 48–92 × 2–5 mm, tapering upwards or equal. Both collections are conserved at SGO.

Clitocybe

CLITOCYBE ANGUSTISSIMA (Lasch) Kummer, Führ. Pilz. p. 122. 1871.

All forms which are white or whitish when dried, have no honey odor when dried but generally a slight anise odor when quite fresh (although inodorous forms have also been encountered), with white or whitish lamellae which are adnate-decurrent non-anastomosing and narrow to rather narrow, and have spores 3.5–5.7 × 2–4 μ, have been determined *C. angustissima.* The odorless forms can be separated from *C. nothofageti* by being white or whitish when dried, and having less decurrent lamellae. We find all transitions between *C. angustissima* and *C. regularis.* A

description of *C. angustissima* as generally found in Patagonia and South Chile was published by Singer, Sydowia 8 : 102. 1954.

CLITOCYBE MELLIOLENS Sing., in Sing. & Digilio, Lilloa 25 : 34. 1952.

Description see there.

CLITOCYBE SUBHYGROPHANOIDES Sing., Sydowia 6 : 181. 1952.

Description see there.

Material studied : ARGENTINA : Tierra del Fuego : Estancia Nueva Argentina, 13–II–1950, Singer M 245 (LIL), typus.—21–II–1950, Singer, M 392 (LIL), paratypus.—Neuquén, Quetrihué, 14–V–1952, Singer M 569 (LIL).—20–V–1952, Singer M 796 (LIL).—Lago Correntoso, Singer M 3518 (BAFC).—CHILE: Llanquihue between Puerto Montt and San Agustín, 8–V–1967, Singer M 6789 (SGO).

CLITOCYBE NOTHOFAGETI Sing., Sydowia 8 : 103. 1954.

Description see there.

We have also found additional material with only subclose, not anastomosing or crisp lamellae, only 30 mm broad, the pileus pallid, hygrophanous, fading to white but distinctly buff when dried in the herbarium, umbilicate ; lamellae pallid-buffish, arcuate, decurrent, subclose, medium broad ; stipe whitish or sordid buffish-pallid, slightly eccentric, 28 × 2.5 mm ; spores 3.8–4.5 × 2.5–3 µ; basidia 4-spored on humus under *Nothofagus pumilio*. ARGENTINA : Neuquén, "Cerro Cortinario" above Puerto Manzano, 1100 m alt., 26–IV–1964, Singer M 3580 (BAFC). We interpret this as younger material of this rare species.

CLITOCYBE SUAVEOLENS (Schum. ex Fr.) Kummer aff. ; Singer, Sydowia 6 : 179. 1952

Description of the Fuegian fungus see there. Although this appears to belong to the Suaveolens-group in the sense of Kühner & Romagnesi, we are not certain that it is the same as the typical form as encountered in Europe, inasmuch as we have not found additional material in order to determine the exact color of the spore print.

CLITOCYBE PLEUROTUS Sing., Sydowia 6 : 182. 1952.

Description see there.

Material studied : ARGENTINA : Tierra del Fuego : Estancia Nueva Argentina, 10–II–1950, Singer M 175 (LIL), typus.—15–II–1950, Singer M 285 (LIL), paratypus.—18–II–1950, Singer M 339 (LIL), paratypus.—Neuquén : Puerto Manzano, 8–IV–1963, Singer M 3310 (BAFC) – a less

eccentric form.—CHILE: Valdivia: Chivería, 31–III–1963, Singer M 3261 (BAFC).—Valparaiso : El Tabo, W. Lazo ET-5 (SGO), a form with extremely rare, scattered ampullaceous cystidia.

CLITOCYBE SCANDENS Sing., in Sing. & Digilio, Lilloa 25 : 36. 1952.

Description see there. Additional material from Patagonia : ARGENTINA : Neuquén : Quetrihué, 14–V–1952, Singer M 604 (LIL).—Lago Correntoso, 9–IV–1963, Singer M 3347 (BAFC).

CLITOCYBE SUBLEPTOLOMA Sing., Sydowia 6 : 179. 1952.

Description see there and in Singer & Digilio, Lilloa 25 : 30, 1952.

Since this species is rather variable and often difficult to distinguish from *C. pleurotus*, we give a completed description which takes care of a number of additional collections.

Pileus whitish or white, with or without (mostly with) an alutaceous ("Saratoga" M & P) or dirty cinnamon pallid center, or from the beginning dirty cinnamon all over, later always becoming dirty cinnamon or alutaceous, hygrophanous, becoming white or whitish at least in marginal region when faded, but sordid grayish pallid to almost whitish when dried, wet with short transparently striate margin, the margin in age sometimes crenulate, glabrous but occasionally with a slight silky covering in the center only when seen under a lens, smooth, not viscid, convex, soon with an umbilicus or central depression, eventually often applanate or concave, but at times remaining convex and showing a depressed center only in dried caps, 6–28 mm broad.—Lamellae pallid white to dirty grayish pallid, assuming a pale buffy tinge when drying, medium broad to broad (up to 3.5 mm), close (but never crowded) to subdistant, decidedly decurrent ; spore print white.—Stipe whitish above and pale alutaceous (11–E–6, M & P) below, or concolorous with the center of the pileus, more rarely entirely whitish, glabrous and smooth, solid, central or exceptionally slightly eccentric,[1]) but often curved, equal or slightly tapering up or downwards, 16–27 × 1–4 mm ; basal mycelium white.—Context white, inodorous.

Spores 4–5.3 × 2.5–3 μ, ellipsoid, smooth, hyaline, with homogenous wall which is rather thin at maturity, without suprahilar depression or with an indistinct one, inamyloid.—Basidia 18–21 × 4.8–5.5 μ, 4-spored; cystidia and cheilocystidia none.—Hyphae inamyloid, with clamp connections.—Epicutis and hymenophoral trama both hyaline, the former dense, formed by repent filamentous, smooth hyphae ; in the subjacent layer some elements widened (to 11–22 μ), less so than in *C. adirondacken-*

1) Slightly eccentric forms can be distinguished from *C. pleurotus* taking into account the decidedly decurrent lamellae of *C. subleptoloma*.

sis, and in places sometimes ramified and less strictly horizontal than in the epicutis, with often rather crowded septa, i.e. not all strictly radial-filamentous ; hymenophoral trama regular, of the *Clitocybe*-subtype, consisting of relatively broad (3.5–9.7 μ) elements which in age have usually up to 0.6 μ thick walls, slightly interwoven in the central strand, more parallel in the lateral stratum, or hymenophoral trama not visibly different in the central strand, not gelatinous in either the hymenophoral trama or the epicutis or subjacent trama ; subhymenium little individualized, consisting of short and narrow, hyaline, thin-walled elements.

On trunks of *Nothofagus* (various species) and *Quillaja saponaria*.

Material studied : ARGENTINA : Tierra del Fuego : Rio Grande : Estancia Nueva Argentina, 10–II–1950, Singer M 169 (LIL), typus.—M 170 (LIL), paratypus.—Neuquén : Quetrihué, 16–V–1952, Singer M 678 (LIL).—Puerto Manzano, 22–IV–1964, Singer M 3421 (BAFC).—CHILE : Santiago : Quebrada Diego, 6–VII–1967, Singer M 7107 (SGO).

CLITOCYBE PATAGONICA (Speg.) Sacc. Syll. F. 9 : 23. 1891.

Agaricus patagonicus Speg., Bol. Ac. Nac. Cienc. Cordoba 11 : 6. 1887.

Since additional material has been collected we prefer to give a completed description representing all collections:

Pileus pale gray to sordid fuscous brown ("Arizona", 13–G–7, M & P), often sordid fuscous brownish in the center, grayish on margin, and more pallid in an intermediate zone but also often unicolorous all over, hygrophanous, white or whitish when faded, but gray to grayish fuscidulous when dried, with short transparently striate margin, more rarely scarcely striate, glabrous, smooth, generally not distinctly viscid when collected, (10)–14–32 mm broad.—Lamellae whitish sordid to dull gray, e.gr. "Hamadan" to "polo tan" M & P., partly slightly intervenose, narrow to rather broad (2–4 mm), somewhat arcuate, adnate-decurrent to decurrent.—Stipe whitish or gray to fuscous ("Madrid"), if whitish becoming gray on drying (as the lamellae), if gray, generally grayish pallid or at least paler towards the apex, not viscid, slightly innately pallid-silky or glabrous, stuffed, becoming hollow, equal or subequal or with widened (to 6–8 mm) base, (15)–25–42 × 2–4.5 mm ; basal mycelium pure white. —Context when wet generally watery gray to whitish, white after surfaces have faded by dehydration, often subconcolorous with the surfaces in the periphery, fleshy in the pileus, fleshy-fibrous in the stipe, odor strong, rarely weak, of marzipan or *Hebeloma radicosum*, or between anise and almond, very agreeable.

Spores 5.8–7.5 × (2.7)–3–3.8 μ, mostly 5.8–6 × 3.3–3.5 μ, ellipsoid, few oblong, smooth, with a slight suprahilar applanation or depression, inamyloid, hyaline.—Hymenium consisting only of basidia, these 16–26

× 6–7.5 μ, clavate, 4-spored ; cystidia and cheilocystidia none.—Hyphae with clamp connections, inamyloid, in the regular (*Clitocybe*-type) hymenophoral trama hyaline to pale fuscidulous, filamentous.—Epicutis of pileus of appressed hyaline hyphae which in adult caps are distinctly gelatinized and loosely arranged when seen in a medium of warm KOH-phloxine; hypodermium pale fuscidulous-grayish from a dissolved intracellular pigment (no incrustations !), few hyphae with moderately thickened wall, most thin-walled.

On the ground in woods, often among dead leaves, rarely on woody humus and on very rotten wood, under *Nothofagus pumilio, N. obliqua, N. alpina, Myrceugenella apiculata,* sometimes attached to the separating flakes of the bark of the latter host. Fruiting from February until May.

Material studied : ARGENTINA : Tierra del Fuego, Rio Grande, Estancia Nueva Argentina, 11/18–II–1950, Singer M 192–M192a (LIL, typus and paratypus).—Neuquén : Quetrihué, 21–IV–1965, Singer M 5118 (BAFC),—"Cerro Cortinario" above Puerto Manzano, 26–IV–1963, Singer M 3586 (BAFC).—CHILE : Malleco : Cordillera de Nahuel Buta, San Carlos, 16–V–1967, Singer M 6928 (SGO).

A very characteristic species because of its gray colors and agreeable odor, in our region with (at least at maturity) gelatinized epicuticular layer, and moderately narrow spores, always in shady places under trees. In Uruguay, we have observed a similar species but without the gelatinized epicuticular layer and with slightly narrower spores (5.5–6.2 × 2.8–3 μ, cylindrical, oblong, or fusiform). In this species, we find some thickened hyphae or hyphal ends, some with small amorphous contents, and up to 8.5 μ broad which remind one somewhat of *C. adirondackensis.* This species, however, does not grow in the woods, but on pastures and meadows on the earth. [1])

Clitocybe obscuratipes Sing. spec. nov.—Pileo atrobrunneo vel fusco vel sordide fuscidulo ("thrush", 15–H–10, 11–D–5, "olive wood", marginem versus et "adobe" et 14–E–7, M & P), hygrophano, dehydratatione alutaceo-sordido vel grisello-alutaceo-pallescente, haud viscoso, glabro, levi, rarius demum breviter sulculato vel ruguloso prope marginem, estriato vel rarius in adultis tenuibus usque ad tertiam radii pellucide striato, convexo et centro depresso vel (aetate) concavo vel profunde umbilicato vel infundibuliformi, interdum applanato margine declivi,

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[1]) **Clitocybe marthae** Sing. spec. nov.—A C. *patagonica,* quae affinis, differt pileo 19–43 mm lato, interdum papillato vel umbonato ; sporis cylindraceis, oblongis, fusoideis, 5.5–6.2 × 2.8–3 μ ; epicute densa ; hyphis interdum tumescentibus. Ad terram pratorum pascuorum. URUGUAY: Maldonado, 27–V–1966, Singer B 4190 (BAFC), typus.

interdum margine lobato, 10–25 mm lato.—Lamellis sordide albidis vel grisello-albidis vel coriicolori-ochroleucis ("sheepskin" vel "tanaura" M & P), arcuatis vel horizontalibus, angustis, subconfertis vel (plerumque) confertis vel confertissimis, interdum crispis, interdum subanastomosantibus, decurrentibus vel subdecurrentibus, interdum furcatis.—Stipite fusco-fuligineo vel pileis obscurioribus concolori (e.gr. "biskra"), rarius sordide fusco-melleo ("teakwood" M & P), haud vel vix pallescente, sed interdum apicem versus subpallidoire, longitudinaliter sericeo-striato, rarius glabro, semper glabrescente, in exsiccatis colore haud mutante vel obscuriore, aequali vel subaequali vel basin versus attenuato, 15–39 × 1–4 mm ; interdum excentrico sed plerumque centrali.—Contexto superficiebus subconcolori, in pileo carnoso, odore et sapore farinaceo, sed odore interdum debili, sapore interdum subadstringente.—Sporis 4.5–7.3 × 3–4 μ, plerumque 5.7–6 × 3.5 μ, ovoideis vel ellipsoideis vel rarius breviter cylindraceis, una gutta globulosa vel compluribus guttulis minutis oleagineis repletis, inamyloideis, hyalinis, levibus.—Hymenio e basidiis efformato, his 19–27 × 5.3–6.7 μ, clavatis, tetrasporis ; cystidiis cheilocystidiisque nullis.—Hyphis fibulatis, inamyloideis, in tramate hymenophorali regulari subtypi Clitocybarum modo hyalinis in strato laterali sed dein fuscidulo e pigmento intracellulari dissoluto.—Epicute pilei ex hyphis densis appressis levibus, subparallelis hyalinis efformata, sed in hypodermio fuscidulis, multis multi-septatis, partim latioribus (usque ad 12 μ latis) vel cellulis terminalibus subtumescentibus (his intumescentiis in tramate hymenophorali interdum etiam observatis, sed semper quam in *C. adirondackensi* minus conspicuis).—Ad terram in silvis nothofagineis (Nothofagus pumilio, N. dombeyi), solitario vel subcaespitose martio aprilique mensibus fructificans. Typus (M 3088) in BAFC conservatus est.

Material studied : ARGENTINA : Neuquén : "Cerro Cortinario" above Puerto Manzano under *N. pumilio*, 19–III–1963, Singer M 3088 (BAFC), typus.—11–IV–1963, Singer M 3368 A, 1200 m alt. (BAFC).—M 3385 (BAFC).—Puerto Manzano, under *N. dombeyi*, 22–IV–1964, Singer M 3399 (BAFC).—Villa Angostura, 22–IV–1965, Singer M 5202 (BAFC).—Rio Negro : Cerro Catedral, 1100 m alt., 29–IV–1965, Singer M 5348 (BAFC).

Clitocybe espinosae Sing. spec. nov.—Pileo fusco vel fusco-griseo (8–H–11, 15–J–12), "oakwood", "new bronze", hygrophano, dehydratatione usque ad grisello-alutaceum ("raffia") pallescente, tegumento innato sericeo subpallido tenuissimo interdum argenteo, interdum zonis concentricis disposito gaudente sed sublente tantum obvio, statu humido saepe subopimo, in pileis tenuioribus breviter pellucide striatello, sed frequentius levi, margine incurvato dein repando, convexo, dein plerum-

que applanato vel concavo, subumbonato vel umbonato, 12–71 mm lato. —Lamellis griseolis, magis griseis in siccis et adultis ("Polo tan", "thrush", "beaver" 7–A–9, "camel's hair" M & P), latiusculis (usque ad 7 mm latis) vel moderate latis, a tramate pilei facile separabilibus, in adultis ab apice stipitis frequenter separatis, tridymis, sinuatis, adnatis, vel decurrentibus ; sporis in massa albis (A Crawshayi, dehydratatione mox cremeo-albis inter A et B chartae Crawshayi).—Stipite grisello vel griseo-pallido marmorato vel griseo-fuscidulo, plerumque pilei colore pallidiore, pilei modo innate sericello glabrescente, solido, semper aequali vel subaequali, numquam bulboso nec ad basin coarctato, 25–57 × 3–11 mm ; mycelio basali albo, lanoso.—Contexto sordide pallido, pallescente, ad zonam periphericam frequenter superficiei concolori, interdum griseo-pallido vel pallide griseo omnibus in partibus ut minimum in vegetis humidis, ceterum haud mutabili, carnoso in pileo et stipite ; odore nullo ; sapore haud notabili, miti.—Sporis 5.5–7.5–(8) × 3–4.5–(5.2) μ ellipsoideis, levibus, hyalinis, inamyloideis.—Hymenio e basidiis tantum efformato, his 28–46 × 6–8 μ, clavatis, hyalinis, tetrasporis, pro ratione nonnullis satis elongatis Hygrophororum modo eliminatione septi basalis causa, granulatione carminophila omnino constanterque destitutis. Cystidiis et cheilocystidiis nullis. —Hyphis fibulatis, inamyloideis, in tramate hymenophorali regulari pallidissime fuscidulis, intertextis vel subintertextis, subregulariter axialiter dispositis, filamentosis, haud umquam in strato laterali recurvatis, 3–13.5 μ diam.—Epicute pilei cutem constituente, ex hyphis filamentosis, 0.7–4 μ crassis, levibus, in strato externo tenuissimè subgelatinosis quando in salutione KOH calida observentur, ut minime ubi tegumentum sericellum evolutum est; pigmento intracellulari, dissoluto, numquam incrustante.—Ad terram in silvis sparsis subxerophyticis, praecipue in vallibus umbrosis, humidiusculis, hieme fructificans. Typus (M 7109) in SGO conservatus est.

Material studied : CHILE : Santiago : Quebrada Diego, 6–VII–1967, Singer M 7109 (SGO), typus.—M 7119 (SGO).—El Cepillo, 600 m alt., M 7114 (SGO).—Quebrada 2 km east of Ranque, M 7146 (SGO).

Aside from the material here enumerated, we have also seen specimens collected by Espinosa in Central Chile, under the name of *Clitocybe nebularis* (SGO). This Chilean author was the first to collect and describe as well as illustrate our species which is said to be edible. It is a very variable species, sometimes assuming the appearance and shape of a *Tricholoma*, sometimes of a *Clitocybe* of section *Disciformes*, and sometimes of a *Melanoleuca*. From the former two genera it differs in having strictly hygrophanous pileus, from the latter in the inamyloid spores and the presence of clamp connections. It is also not a *Lyophyllum* since the basidia are strictly devoid of siderophilous granulation. This is the

largest of our Clitocybes, but its southern limits are presently unknown, and it may be assumed that it penetrates the relict forests of Central Chile and perhaps the drier regions of South Chile.

Ripartites

RIPARTITES TRICHOLOMA (A. & S. ex Fr.) Karst.

Agaricus tricholoma A. & S. ex Fr., Syst. Mycl. 1 : 270, 1821.
Flammula tricholoma (A. & S. ex Fr.) Kummer, Führ. Pilzk. p. 82, 1871.
Inocybe tricholoma (A. & S. ex Fr.), Sacc., Syll. 5 : 790. 1887.
Paxillus tricholoma (A. & S.) Quél., Enchir. p. 92, 1886.
Astrosporina tricholoma (A. & S.) Schröter in Cohn, Kr.-fl. Schl. 1 : 577. 1889.
Paxillopsis tricholoma (A. & S. ex Fr.) Lange, Dansk Bot. Ark. 47 : 366. 1936.
Agaricus leucophaeus Pers., Mycol. Europ. 3 : 73. 1828.
Paxillus strigosus Peck, Bull. Buff. Soc. Nat. Sc. 1 : 56. 1873.

Pileus on whitish-pallid ground brown ("Wigwam" M & P) dotted-fibrillose, the fibrils denser in the center, the whole marginal zone whitish-pallid, with thin, short and weakly furrowed or sulcate margin, neither viscid nor hygrophanous, the extreme margin ciliate-fimbriate when seen under a lens, 19–33 mm broad.—Lamellae brown to fuscous ("India buff" to "whippet"), narrow, close, arcuate, decurrent ; spore print brown ("desert" M & P).—Stipe brownish (near "tiffin" M & P), pruinate, equal or tapering downwards, 20–26 × 2–4 mm; veil none or fugacious.—Context whitish-pallid, fleshy ; odor and taste like some *Cortinarii,* slightly mawkish.

Spores 4–6 × 3.2–4.5 µ, with conic-cylindric ornamentations verruculose-spinulose, the ornamentation 0.3–0.5 µ projecting, brown, episporial, in polar view spores angular, brown or brownish.–Hymenium consisting of basidia, bordered by cheilocystidia ; basidia 21–26.5 × 5–6–(7) µ, 4-spored ; cheilocystidia numerous but not striking and usually versiform, 13–17 × 3–6 µ, small, hyaline, often curved, often nodose or forked. Cystidia, none.–Hyphae with clamp connections, in the subregular hymenophoral trama irregularly interwoven but in parts subparallel, not gelatinous, not pigmented, 2–6 µ thick.

On humus under *Nothofagus dombeyi* and *Austrocedrus chilensis ;* in Europe also on the ground but under other trees. Fruiting in fall.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 22–IV–1964, Singer M 3450 (BAFC).—Numerous European collections, i.a. FRANCE : Typus of *A. leucophaeus* Pers. (L).

The above description corresponds exclusively to M 3450.

Lepista

LEPISTA DIEMII Sing., Sydowia 8 : 103. 1954.
A complete description see l.c.

LEPISTA FIBROSISSIMA Sing., Sydowia 8 : 104. 1954.
A complete description see l.c.

LEPISTA GLABELLA (Speg.) Sing., Lilloa 22: 192. 1951.
A complete description with synonymy, see Lilloa 23 : 158. 1951.

LEPISTA PERSONATA (Fr. ex Fr.) Cooke and *LEPISTA NUDA* (Bull. ex Fr.) Cooke and *L. SORDIDA* (Fr.) Sing.

These are common species in Europe, and adventicious in Southern Chile, Central Chile, and Argentina. Descriptions of these species, as well as excellent illustrations of the same, can be found in the current European literature.

LEPISTA ARGENTINA (Speg.) Sing., Lilloa 22 : 193. 1951.
Description, see Lilloa 23 : 161, 1951. Additional collections would suggest that this species has normally a stage with violet (44–E–6, M & P) margin. It is doubtful whether this should be considered a variety of the polymorphous *L. nuda,* or an autonomous species.

Tricholoma

TRICHOLOMA TERREUM (Schaeffer ex Fr.) Kummer ; *TRICHOLOMA SCALPTURATUM* (Fr.) Quél.; *TRICHOLOMA PESSUNDATUM* (Fr.) Quél.

These are common species in Europe, and adventicious in Central and Southern Chile and in Argentina. Description and good illustrations of these species can be found in the current European literature.

TRICHOLOMA CORTINATELLUM Sing., Sydowia 8 : 107. 1954.
As for a description of this species, see Darwiniana 14 : 25. 1966.

TRICHOLOMA CORTINATUM Sing., Sydowia 6: 192. 1952.
As for a description see Singer, Darwiniana 14 : 26. 1966.

TRICHOLOMA FAGNANI Sing., Sydowia 6: 194. 1952.
Description see Darwiniana 14 : 32. 1966.

TRICHOLOMA OCHRACEOROBUSTUM Horak, Sydowia 17 : 156. 1964. Var. *OCHRACEOROBUSTUM.*

Description of the type variety of this species see Horak, l.c.

Tricholoma ochraceorobustum var. **cautinense** Sing. var. nov.—Pileo rubescente-brunneo, sicco atrobrunneo (inter "coffee" et "cattail" M & P), viscoco, cito siccato et tunc nitente in parte, margine incurvo, subtiliter radiatim fibrilloso-tomentoso, partim glabro vel glabrescente, convexo, 50–60 mm lato.—Lamellis albidis, siccis cupreo-brunneis, latiusculis, haud anastomosantibus, subconfertis vel confertis, sinuatis.—Stipite albido, e fibrillis brunneolis plus minusve tomentoso, aequali vel subaequali, eius varietatis typicae tenuiore, diametro pilei longiore, haud fusiformiter attenuato ad basin ; velo membranaceo, haud raro fragmentario, apicali, annuliformi.—Contexto albido ; odore debili, non ingrato.—Sporis breviter ellipsoideis 7.5–8.3 × 5.5–6.5 μ; basidiis 33–38 × 9 μ, tetrasporis; cystidiis nullis ; hyphis defibulatis ; epicute pilei pellicula tenui, partem superiorem epicutis repraesentante, ubique tecta, pellicula gelatinosa, ex hyphis filiformibus efformata.—Ad terram in silvis nothofagineis *(N. obliqua)*, gregatim. Typus e CHILE : Cautín : pr. v. Pidenco, 26–IV–1967, a R. Singer M 6540 b (SGO) lectus.

We have never collected the type variety, but feel that our collection M 6540 b comes very close to the original description of var. *ochraceorobustum* although it differs in the exact colors of the pileus, in the dry surface of the latter, in the size and shape of the stipe, and the intervenation of the lamellae. This latter character is hardly a constant one ; the colors may be variable as they are in some other species of this section of *Tricholoma,* and the gelatinized pellicle, well visible in preparations of warm KOH in young specimens of var. *cautinense* becomes at times less continuous and less demonstrable in old or strongly rain washed caps. Without wishing to comment on the real range of variability of these characters in each of the two varieties, both found–although in sufficient quantity–only once (var. *ochraceorobustum* north of Ushuaia, Tierra del Fuego ; var. *cautinense* north of Loncoche, Cautín), the difference of the habit, principally due to the size and shape of the stipe, is remarkable enough—even if the other characters were variable—to justify a separate taxon for the more northern form.

It is quite possible that *Tricholoma inocybiforme* Horak, l.c. p. 155, is the same as our var. *cautinense,* but the color of our specimes is different, their spores are less elongated, the pileus is not dry, and the forest type in which they occur is another. All these characters with the exception of the spore measurements, may not be very important, and not more significant than in the case of *T. ochraceorobustum* var. *ochraceorobustum,*

but the spore measurements, very important in this group of Tricholomas, seem to exclude Horak's species. It would appear, therefore, that *T. inocybiforme* is an independent species, unknown to this author.—*Tricholoma testaceum* Stevenson, Kew Bull. 19: 15. 1964, seems to be a related species with smaller spores.

TRICHOLOMA INOCYBIFORME Horak, Sydowia 17 : 155. 1964.

Unknown to this author ; description see Sydowia l.c. ; cf. also commentaries on the preceding species.

Tricholoma elvirae Sing. spec. nov.—Pileo rubescente-badio ("trotteur tan", "casserole" M & P), viscido sed mox sicco, margine incurvato, acuto, costato vel sulcato, glabro, convexo, obtuso, 57–117 mm lato.—Lamellis sordide cremeo-albidis, demum ferrugineo-maculatis, confertis, latis, sinuatis.—Stipite plerumque albido ad apicem in juvenilibus, sed primum rarius, dein unicolori, pileo concolori, sicco, longtidinaliter appresse fibrilloso, solido, aequali, 60–77 × 11–12 mm ; velo nullo.—Contexto albo, immutabili ; odore farinaceo ; sapore amarissimo.—Sporis 6–8 × 4.2–6.3 μ, breviter ellipsoideis, levibus, guttula una grossa globosa repletis, inamyloideis, hyalinis, in KOH interdum intus flavidis.—Hymenio e basidiis efformato, his 26–36 × 6–10 μ, tetrasporis ; cystidiis nullis.—Hyphis defibulatis, inamyloideis. Epicute ixocutem efformante, ex hyphis laxiusculis, filamentosis (2–6 μ latis), pigmento rufobrunneo granulose incrustatis consistente ; hypodermio haud gelatinoso, etiam cutem efformante sed hyphis hypodermii 5–11 μ latis, pigmento quoque incrustante ornatis.—Ad humum et terram sub *Nothofagis obliquis* gregatim, rarius prope *Nothofagum alpinam* aut *N. dombeyi*. Typus (M 6545) in SGO conservatus est.

Material studied : CHILE : Valdivia : Cuesta Santa Elvira, 27–IV–1967, Singer M 6545 (SGO), typus.—Malleco : Cordillera de Nahuelbuta, San Carlos, 16–V–1967, Singer M 6925 (SGO), paratypus.

Tricholoma mostnyae Sing. spec. nov.—Pileo roseo-ochraceo vel cinnamomeo vel ferrugineobrunneo, magis roseo-ochraceo ("sundown" M & P) marginem versus, magis cinnamomeo vel brunneo centrum versus ("India spice", "Alamo", M & P), haud radiatim lineato, glabro, viscido, levi, convexo, dein centro leniter depresso vel ex toto subapplanato, usque ad 105 mm lato.—Lamellis pallidissime argillaceis vel subpallidis, demum pallide alutaceis, confertis, sinuatis.—Stipite margini pilei concolori, apice albo haud delimitado sed unicolori vel subunicolori, apice pruinato, glabrescente, ceterum glabro, solido, subaequali vel aequali, usque ad 53 × 20 mm ; velo nullo.—Contexto albo, odore debili vel nullo, haud

farinaceo umquam ; sapore miti.—Sporis 5–6 × 3.5–4 μ, plerumque ±5.5 × 4 μ, ellipsoideis vel breviter ellipsoideis, hyalinis, inamyloideis, levibus.—Hymenio e basidiis consistente, basidiis 28–31 × 7–7.5 μ, 4-sporis ; cystidiis haud visis.—Hyphis defibulatis, inamyloideis.—Epicute fortiter gelatinosa, ex hyphis repentibus filamentosis, subtiliter pigmento incrustatis efformata.—Habitat ad terram et humum in silvis nothofagineis sub Nothofago obliqua, autumniali. Typus in provincia Valdiviae chilensi lectus (M 6883) et in SGO depositus est.

Material studied : CHILE : Valdivia : Cuesta Sta. Elvira, 14–V–1967, Singer M 6883 (SGO).

The shape of the stipe, absence of a specific taste and odor, and smaller spores differentiate this new species from *T. fusipes*. It is named in honor of the Curator of the Museo Nacional de Historia Natural, Santiago, Dr. Grete Mostny.

TRICHOLOMA FUSIPES Horak, Sydowia 17 : 158. 1964.

Tricholoma grossulariodorum Horak, l.c. p. 161.

A complete description of this species can be found in Darwiniana 14 : 31. 1966.

Material studied: ARGENTINA: Rio Negro: Camino de Laguna Frías al Paso de las Nubes, 24–III–1963, Singer M 3159 (which was intended to be type of a new species which later, by correspondence with the author and comparison of the original description, was renamed *T. fusipes*), (BAFC).—Neuquén : Los Cántaros, 28–IV–1965, Singer M 5336 (BAFC.)—CHILE: Valdivia: West slope of the Cordillera Pelada, under *Nothofagus nitida*, 6–V–1965, Singer M 5539 (BAFC).

TRICHOLOMA USTALOIDES Romagnesi in Kühner & Romagnesi, Bull. Nat. Oyonnax 8: 76. 1954.

A complete description of this species was given in Darwiniana 14 : 28. 1966. Horak (l.c. p. 157) identifies this species as applied to our South American material, with his *T. farinolens* which, however, is described as dry and smaller, hence we consider it a different species. It is true that Horak's species came from the same locality as our material, but if really identical, it was incompletely and in part erroneously described.

TRICHOLOMA FARINOLENS Horak, Sydowia 17 : 157. 1964.

A species unknown to this author, described by Horak, l.c. ; cf. commentaries on the preceding species.

TRICHOLOMA PATAGONICUM Sing., Sydowia 8: 109. 1954.

A complete description of this species see Darwiniana 14 : 30. 1966.

Material studied : ARGENTINA : Rio Negro : Camino de Laguna Frías al Paso de las Nubes, 25–III–1963, Singer M 3178 A (BAFC). – Brazo Tristeza, Lago Nahuel Huapí, 27–IV–1965, Singer M 5327 (BAFC).—M 5327 A (BAFC).—Neuquén : Quetrihué, 13–V–1952 and 14–V–1962, R. Singer M 526, M 648 (paratypus and typus respectively), (BAFC).—Villa Angostura, 29–IV–1964, Singer M 3644 (BAFC)—17–IV–1965, Singer M 5023 (BAFC).—CHILE : Llanquihue : Ensenada, 11–V–1967, Singer M 6835 (SGO).

TRICHOLOMA DIEMII Sing., Sydowia 8 : 108. 1954.
A complete description of this species see Darwiniana 14 : 27. 1966.

TRICHOLOMA HEBELOMOIDES Horak, Sydowia 17 : 159. 1964.
See description l.c.

TRICHOLOMA ANDINUM Horak, Sydowia 8 : 160. 1964.
See description l.c.

Armillariella

Armillariella griseomellea Sing. spec. nov.—Pileo primum griseo vel sordide grisello-fuscidulo ("racquet", "drab", 15–E–6, 16–C–12), interdum maculis atrocastaneis notis, dehydratatione ochrascente ("sunlight") in centro, grisello-tincto ad marginem ("Polo tan" M & P), toto primum spinuloso-furfuraceo-squarroso, demum interdum subglabrescente, centro et margine primum levibus sed zona intermedia frequenter costato-scrobiculata vel rugoso-scrobiculata, margine demum in zona ±6 mm lata sulcato nudoque, primum campanulato-convexo, dein repando, frequenter umbonato, hygrophano, in vetustis humidis clare cinnamomeo ("Papyrus" M & P), dehydratatione ochrascente ("sunlight", 10–D–4, M & P) sed in umbone frequenter colorem originalem pileorum juvenilium retinente, in vetustis saepe radiatim fisso, in juvenilibus raro iam clare alutaceo (non griseo : "sweetmeat" M & P), magnitudine *A. melleam* typicam aemulante.—Lamellis clare cinnamomeo-salmoneis vel cinnamomeis ("sugar cane" vel "golden wheat" M & P), dein sordescentibus ("sombrero" M & P), ad aciem interdum obscurioribus, horizontalibus angustisque in juvenilibus, dein latiusculis vel latis ± ventricosisque, sinuato-adnatis, dein sinuato-decurrentibus; sporis in massa candidis ("A" chartae Crawshayi.—Stipite albido vel argillaceo ("suntan"), albido-fibrilloso sub annulo, frequenter toto floccis griseis ornato, demum cinnamomeo-griseo ("tawny birch" M & P), et gradatim denudato, solido, dein farcto, aequali vel subaequali, sed ad basin frequenter tumescente subbulbosoque,

magnitudine *A. melleam* typicam in mentem revocante ; velo crasse membranaceo, albido, externum ad latus griseo-verrucoso-squarroso-floccoso, in adultis annulum apicalem, latum, duplicem formante.—Contexto albido in pileo et in interiore farcto stipitis, ceterum, praecipue in partibus periphericis, cinnamomeo-griseo ("tawny birch") ; odore debili vel subnullo ; sapore mox fortiter styptico.—Sporis at eis *A. montagnei* haud ditinguendis – Hymenio e basidiis efformatis cheilocystidiisque marginatis ; basidiis plerumque tetrasporis, fibula basali destitutis ; cheilocystidiis numerosis sed basidiolis interruptis, 15–38 × 6–13 μ, clavatis vel subvesiculosis, raro capitais, frequenter septatis, hyalinis vel fulvidis.—Hyphis desibulatis, inamyloideis, in tramate hymenophorali leniter sed manifeste subbilarerali, nulla in parte gelatinoso, hyalinis.—Epicute pilei ex hyphis elongatis cutem efformantibus constructa, haud gelatinosa ; ex hoc strato hyphis fasciculatis ascendentibus vel erectis nec non cellulis dermatocystidioideis solitariis (e.gr. 50 × 8 μ) late rotundatis in apice excrescentubus et flocculos pilei formantibus.—Ad truncos varios, praecipue Aextoxici fasciculariter et frequenter obvia species. Typus in Chile, Valdivia, Cordillera Pelada, 50–100 m altitudinis, 1–4 Mayi 1967 a R. Singer (M 6574) lectus et in Herbario SGO depositus est.

This, as well as *A. limonea*, *A. montagnei* var. *montagnei*, and *A. montagnei* var. *umbrinobrunnea* belong in a group of not or hardly gelatinized species of the *Mellea* complex with pure withe spore print and astringent taste. These species and varieties can be distinguished from each other by the color, especially of the pileus; the first two (*A. griseomellea* and *A. limonea*) are, until the present time, known only from Southern South America, whereas *A. montagnei* represents a widely distributed species, also occurring in Europe, where it is confused with *A. mellea*.

ARMILLARIELLA LIMONEA Stevenson, Kew Bull. 19 : 13. 1964.

Description see there. Our specimens have all the characters of *A. montagnei* macroscopically, and *A. griseomellea* microscopically, differing in "primulin y" (M & P) pileus which is entirely spinulose-flocculose-squarrulose ; the stipe is at first whitish to whitish buff, and squarrulose as the pileus, later becoming brownish ; context whitish or buff-white, strongly astringent.

Material studied : CHILE : Valdivia : Cordillera Pelada, west slope between 100 and 150 m altitude, 4–V–1967, Singer M 6676 (SGO).

Colored illustration see Stevenson, l.c. pl. 2, fig. 3.

ARMILLARIELLA MONTAGNEI Sing., Lloydia 19 : 182. 1956 var. *MONTAGNEI*.

A complete description of this species can be found in Lloydia, l.c.

However, the Latin diagnosis contains an error since there the taste is given as "miti" in contradiction to the English description that follows.

ARMILLARIELLA MONTAGNEI var. *UMBRINOBRUNNEA* Sing., Lloydia 19 : 183. 1956.

See a short description, l.c.

A. montagnei and its variety are also commonly found in Europe, for example in Sweden, where I found it, in company of Dr. M. Moser, near Femsjö, in Fries' original collecting ground, the Högnen forest, 21–VIII–1964, Singer C 4174 (BAFC).

ARMILLARIELLA PROCERA (Speg.) Sing., Flora Neotropica (in print). 1969.

Armillaria procera Speg., Bol. Acad. Nac. Cienc. Cordoba 11 : 385. 1889.

Pileus young grayish ("aluminum", "old silver", "English gray", "acorn") with ochraceous center, or grayish all over with paler ("lark, parchment" M & P) margin, later becoming less grayish and assuming the colors of *A. mellea* and *A. puiggarii* (11–G–6) with deeper ("Mandalay") center and/or spots, hygrophanous, paler when dehydrated, not showing any gray in dried material even if this is young, sulcate over up to one third of the radius, frequently rugose and uneven in an intermediate zone between margin and center, viscid, with concolorous small spinulose-flocconous small scales in the center, but margin from the beginning or soon naked, the scales concolorous with the ground color, convex, when mature with depressed center and often with an umbo in the depression, 49–65–(85) mm broad.—Lamellae white without any cream or salmon shade, or whitish with a very slight cream shade, but eventually becoming entirely or in spots ochraceous-buff (10–F–5), close or subclose, rather broad, sinuate-decurrent ; spore print on white paper pure white ("A" of the Crawshay scale).—Stipe white but becoming bister or deep umber (e.gr. "sepia" M & P) from the base upwards, usually remaining concolorous with the lamellae in the upper portion, glabrous and naked, or only slightly fibrillose below the annulus, equal or tapering downwards, or slightly tapering upwards, solid, 37–58 × 4.5–9–(12) mm ; veil membranous or thinly membranous, not cortinoid, white, whitish, or pale grayish, forming in adult specimens a membranous or thin-membranous, well developed not very broadly flaring annulus ; veil rests occasionally also on the entire surface of the pileus.—Context white or whitish, odor fruity or none ; taste at first mild, but after prolonged chewing very slightly and not very disagreeably styptic in most specimens.

Spores 6.5–11.7 × 4.5–7.3 μ, mostly 8–8.5 × 4–4.5 μ, ellipsoid to ovoid, sometimes oblong, often with applanate inner side, with thin, eventually often slightly thickened wall, smooth, hyaline, later often slightly pale melleous in KOH mounts, inamyloid.—Basidia (1)–(2)–(3)–4-spored, 23–38 × 6.5–11.7 μ, some sclerobasidia mostly present (with thick walls : 0.5–0.9 μ) pale melleous to melleous, 20–31 × 8–10 μ, with four sterigmata. Cheilocystidia 16–24 × 3–6.5 μ, irregular in shape, but not vesiculose, mostly narrowly clavate, some filamentous, thin-walled, moderately numerous to scarce.—Hyphae without clamp connections, but often some basidia with clamped base, all hyphae inamyloid, those of the subhymenium small and short, appearing subcellular ; hymenophoral trama consisting of a non-gelatinized mediostratum whose hyphae are broad (up to 30 μ) and somewhat interwoven although with an axillar trend, and a hymenopodium which consists of somewhat divergent and partly slightly gelatinized narrower hyphae which are rather loosely arranged and become somewhat interwoven in age, maintaining the divergent positions only in the extreme outer portion neighboring the subhymenium, eventually all traces of a subbilateral structure lost.—Epicutis of pileus slightly gelatinized above a non-gelatinized hypodermium and underneath the fasciculate ascending to erect hyphal strands which form the scales.

On dead trunks of frondose trees, especially *Salix, Nothofagus, Myrtaceae*. Fruiting from fall until winter. Also on dead or living (?) roots of trees.

Material studied : CHILE : Santiago : Cerro Robles, 19–VI–1967, Singer M 6983 (SGO).—Valparaiso : Quintero, 5–VI–1967, coll. C. Villagrán, comm. Singer M 6945 (SGO).—27–VI–1967, Singer M 7021 (SGO).—BRAZIL : São Paulo : Apiaí, July 1888, Puiggari 2901/2 (LPS).—June 1881, Puiggari 1539 (LPS).—ARGENTINA : Buenos Aires : Tigre, 29–V–1965, Singer S 612 (BAFC).

The greyish color, so characteristic for this species in the young state, gets lost in age and on drying, and the color was described by Spegazzini from dried, old specimens. However, a careful comparison of the type and topotype specimens at LPS reveals that the species described by Spegazzini is not, as I thought first, identical with *A. puiggarii*, but represents a good species, very common in Central Argentina, Southern Brazil, and Central Chile, including some of the relict forests. Further south, this species is replaced by *A. sparrei* which does not show the gray colors in youth and has less white lamellae, slightly larger spores and broader cheilocystidia.

ARMILLARIELLA SPARREI Sing., Lloydia 19 : 183. 1956.

Pileus melleous or almost cinnamon ("raffia" to 11–F–6) or chestnut-brown ("buckthorn br." M & P), on margin almost pallid or pale grayish ("Lido" M & P or mostly paler), dried e.gr. 10–F–6 with the center 11–H–6, with small brownish squamulose-squarrulose floccules when young in the center but gradually becoming naked, on margin rarely, indistinctly, and partially floccose, viscid at least in the marginal zone, even glutinous there, subviscid underneath the vestiment in the center, drying rapidly there, smooth or rugulose but always with at least short sulcate margin but sulcation often over a wider zone, or transparently striate over one third of the radius, at times developing radial fissures in age, convex, often umbonate, eventually more or less applanate and at times with uplifted margin, 18–75 mm broad.—Lamellae pale salmon-cream or cream when young (near "caen stone" M & P, or paler, later becoming vinaceous-brown or chestnut brown spotted and at times concolorous with the old pileus, but generally near "maple" (greyish cream-beige)) with "buckthorn br." spots, rather broad, not or not distinctly intervenose, close to subclose, adnate with irregularly decurrent tooth or sinuate-decurrent ; spore print fresh pure white.—Stipe whitish to pale cinnamon ("dorado") at the apex, with innate white longitudinal fibrils, base becoming brown to dark brown ("Sudan br.", then "bracken") and this deeper color gradually reaching the middle or the zone of the annulus, appressedly pallid or cream pallid fibrillose from velar fragments below the annulus, and eventually naked but often becoming coarsely innately fibrillose in age, solid, eventually stuffed, almost equal or slightly tapering towards the apex, sometimes with subbulbous thickened base, generally as long or somewhat longer than the pileus diameter, 4.5–15 mm broad ; annulus white, never gray-squarrulose, thin-membranous, simple or almost so, at times on outer side slightly and fugaciously whitish or cream flocculose, never yellow or gray in any part, not broadly flaring but soon becoming lacerate in many specimens, or becoming narrowly appressed ; black rhizomorphs generally scanty.—Context pallid, eventually partly pigmented and showing the colors of the surfaces, especially in the base of the stipe ; odor none, or weak, fruity-raphanaceous ; taste mild, at times very slowly and very slightly substyptic.

Spores (7.3)–7.5–10.7–(12) × (4.5)–4.7–7.3 μ, mostly around 9–9.8 × 6 μ, thin to thick-walled, without suprahilar depression, with a suprahilar weak applanation or without it, ellipsoid, fewer short ellipsoid, or cylindric, older spores often pale melleous-stramineous in KOH, inamyloid, smooth, or at times rough because of a perisporial ornamentation which adheres to the spore wall in form of small patches (endosporium and perisporium little colorable in cresyl blue mounts, episporium pale

blue to blue), without germ pore or callus.—Hymenium consisting of basidia and margined by cheilocystidia, the former 30–44 × 6.3–8 μ, 2–4-spored or all 4-spored, some (sclerobasidia) with thickened walls, the thinwalled ones rarely larger than 35 × 7.5 μ, without basal clamp ; cheilocystidia 14.5–22.5×6.7–13.3 μ, basidio, or ventricose, or vesiculose, obtuse, sometimes very scarce.—Hyphae without clamp connections, in the hymenophoral trama hyaline and inamyloid, the mediostratum axially arranged, the hyphae interwoven, subinterwoven or parallel, hyphae less dense, more uniformly filamentous, and recurved towards the subhymenium in the lateral stratum or hymenopodium, somewhat to strongly gelatinized there, later the difference between mediostratum and lateral stratum becoming more distinct but trama then less bilateral, the hyphae of the lateral stratum running in all directions.—Epicutis of pileus a thin layer of ± gelatinized filamentous hyaline hyphae which are repent and loosely arranged, above this a structure of often short-celled, multiseptate elements which forms appressed to ascending or suberect chains with rounded tips at the terminal cells, but basically elongated and not spherocyst-like, with membranal pigment but not pigment-incrusted (this layer often intermittent and forming the scales of the center of the pileus) ; hypodermium of repent non-gelatinized elements which are broader and often thick-walled.

On trunks of various trees (*Nothomyrcia, Nothofagus, Aextoxicum, Saxegothaea* etc.), generally fascicular in large bunches. Fruiting in fall.

Material studied : ARGENTINA : Numerous collections from the Cordillera.—CHILE : Valdivia : Chivería, 29–III–1963, Singer M 3228 (BAFC).—Hueycolla, 4–V–1967, Singer M 6672 (SGO).—Juán Fernandez : Masatierra, 12–III–1955, B. Sparre F 33 (S) typus, also F 13 and F 20 (S, LIL).

Armillariella sparrei var. **elaeodes** Sing. var. nov.—A forma typica differt pileo ad olivaceum vergente. Typus varietatis in ARGENTINA : Neuquén : Puerto Manzano, 18–V–1952, a R. Singer M 741, collectus et in LIL depositus est.

This variety has the same relation to var. *sparrei* as *A. montagnei* var. *montagnei to A. montagnei* var. *umbrunobrunnea.* Var. *elaeodes* should not be mixed up with the following species which differs in the somewhat smaller and narrower spores, deeper pileus colors and less bilateral, non-gelatinized hymenophoral trama.

Armillariella sparrei var. **xantha** Sing. var. nov.—Pileo flavo ("light cadmium" Ridgway), fibrillis laete citrinis appressis (ita ut in Russula subvelata, pulverulenta, mutabili) ornato, maculis hygrophanis (ita ut in

Clitocybi gilva) variegato, maculis brunneolis ("Buckthorn brown" Ridgway) et luteis ("yellow ocher" Ridgway), manifeste radiato-rugoso et scrobiculato, subviscido vel viscido, ad marginem perbreviter leniterque sulcato, convexo, saepe subumbilicato, magnitudine *A. melleam sparreique* aemulante.—Lamellis cremeis, maculis vel areis violaceo-brunneis mox ornatis, confertis, adanto-decurrentibus vel decurrentibus, mediocriter latis vel latiusculis ; sporis in massa albis (haud candidis, inter A et B chartae Crawshayi in vegetis, sed magis prope A quam prope B).—Stipite in adultis brunneolo vel brunneo, ad apicem extremum saepe breviter longitudinaliter costato, e basi usque ad annulum et in parte exteriore annuli flavofibrilloso, ad apicem supra annulum albo vel albido-fibrilloso, solido, demum farcto, magnitudine varietatis typicae aut paullum maiore ; velo annuliformi, annulo superiorem-interiorem ad partem albidulo vel albo, apicali, integro, persistente, sed saepe angusto vel appresso.—Contexto albo, in humidis brunneolo-marmorato, brunneolo ad basin stipitis, haud rubescente, sed prope basin interdum flavescente ; odore debili ; sapore miti.—Sporis 7.5–10.3 × 4.5–6 μ, ellipsodeis, hyalinis, applanatione suprahilari plus minusve evoluta, membrana subtenuiuscula instructis, inamyloideis.—Basidiis e.gr. 33–34 × 5.3–7.7 μ, (2)–4-sporis ; cheilocystidiis 13–32 × 3–10.7 μ versiformibus, vesiculosis vel clavatis vel late ampullaceis, rarius cylindraceis, plerumque clavatis.—Hyphis et basibus basidiorum defibulatis, inamyloideis ; tramete hymenophorali in mediostrato regulari ex hyphis subparallelis axialiter dispositis tenuitunicatis vel moderate tenuitunicatis, elongatis, plerumque cylindraceis, 4.5–14 μ latis, sed interdum usque ad 20 μ, in maturis stratum 110 μ latum consistuentibus efformato ; hymenopodio (vel strato laterali) manifeste gelatinoso, ex hyphis divergentibus, 2–2.5 μ diam. tenuitunicatis, angustiroribus, laxe dispositis efformato ; subhymenio 8–10 μ crasso ; hymenopodio 20–35 μ crasso.—Epicute basica plerumque hyalina, ex hyphis tenuibus vel latiusculis, laxe dispositis efformata, quarum cellulae terminales frequenter subulatae vel ampullaceae sunt et 3–11 μ diametri exhibunt, gelatinosa, typi ixocutis. Hypodermio haud gelatinoso, cutis structura gaudente, ex hyphis pigmentatis (sed haud pigmento incrustatis) latiusculis subintertextis vel intertextis efformato ; fibrillis superficialibus pilei et stipitis ex hypharum fasciculis ascendentibus vel semierectis, dein appressis, haud gelatinisatis, apicibus obtuse rotundatis efformatis.—Ad basin vivae aut mortuae arboris frondosae in silvis fasciculatim. Typus in America boreali, st. Michigan, Hell, 23–IX–1957, a R. Singer M 1620 (MICH) lectus.

This variety may easily be confused with old specimens of *A. limonea* ; its existence in the Austral-American flora has not been proven and is likely only in form of an adventicious element. It has all basic characters

of *A. sparrei* but the abundant yellow-pigented zones of pileus and stipe are never found in var. *sparrei* and var. *elaeodes*.

ARMILLARIELLA NOVAEZELANDIAE Stevenson, Kew Bull. 19: 14. 1964.

Pileus on greyish-cream to cream ("Maple", "Leghorn" M & P) ground olive brown or olive fuscous ("gold", "rubber") fibrillose, the margin mostly almost naked or naked and lighter colored fuscous umber ("olive wood") to paler, the extreme margin often almost white, younger specimens on the contrary more brown and less olive in the center with a "buffalo" to 15–J–9 (M & P) shade on pale ocher (12–J–5) ground and the small squarrulose scales of the central part of the pileus brown (varying in color from "burnt umber" to "cat tail" M & P), surface at times with a more olive general color impression ("hemp", "willow"), subviscid to viscid when wet, at first not hygrophanous and mostly smooth, later hygrophanous and at times partially fading to almost white, mature mostly rugulose young estriate, later transparently striate or sulcate up to over one third of the radius, at first more often obtuse than umbonate, later more often merely subumbonate and rarely convex-obtuse, at first at times shallowly umbilicate, eventually tending to become flattened or with upturned margin, the latter at first strongly incurved, 30–46 mm broad.—Lamellae white or pale ocher whitish, or with a slight flesh-color shade (9–B–2/3, M & P), moderately broad (about 5 mm), subclose or subdistant, or close, but not crowded, sometimes crisp or forked, when old sinuate-adnate and with decurrent tooth; spore print before dehydration pure white to just off "A" (Crawshay) towards "B", but much closer "A", i.e. varying between pure white and not quite pure white (like *A. sparrei* var. *xantha*).—Stipe white entirely or at apex only, otherwise, particularly at the base, brownish or brown without an olive tinge, eventually apex paler brown in most specimens, finely white flocconous below the annulus, often striate-costulate in continuation of the lamellae at the extreme apex, solid, eventually stuffed, equal, but often with slightly bulbous widened base, 40–(100) × 5–9 mm; annulus varying from thin-membranous to loosely woven and woolly, generally rather thick but not very coherent, and therefore more rarely forming a broad, shirt-like pendulous smooth persistent ring than a rather fugacious apical belt, veil at first a rather coarse cortina connecting the surface layer of the stipe with the margin of the pileus.—Context white or whitish in the pileus, whitish to brownish white in the stipe; odor weak, raphanaceous-fruity; taste mild, maybe at times slightly raphanaceous and even weakly pungent but neither bitter nor astringent (exceptionally very slowly very weakly styptic).

Spores 6.8–9 × 4–5.8 μ, mostly 7.5–8 × 4.7–5 μ when quite mature, with from hyaline to stramineous-hyaline wall up to 0.6 μ thick, smooth, ellipsoid to fusoid, or ovoid-fusoid (with narrowed but obtuse apex), inamyloid.—Hymenium consisting of basidia and, at and near edge, cheilocystidia ; basidia 28–37 × 6.5–8 μ, (2)–4-spored, clavate, hyaline, thin-walled, with basal clamp, or, in a majority of cells, without basal clamp ; sclerobasidia 14–31 × 7–9 μ, with 0–2–(4) sterigmata, with 0.4–1.0 μ thick wall. Cheilocystidia crowded at the edge and still scattered near the edge, 15–30 × (2)–4.5–8–(12) μ, versiform, mostly cylindric to subventricose or fusoid or subampullaceous, sometimes with slight constrictions above, mostly broadly rounded at the tip, hyaline, thin-walled. —Hyphae without clamp connections and inamyloid ; hymenophoral trama regular, or slightly subregular-subbilateral of the *Clitocybe*-subtype, no hymenopodium or lateral stratum differentiated excepting the slight and inconstant divergence of the outermost (nearest the subhymenium (hyphae ; subhymenium well differentiated, of short and small elements, hyaline, not gelatinized, about 10 μ thick).—Epicutis of the pileus very thin, of gelatinized hyphae which form anixocutis but tend to disappear soon, generally filiform and filamentous, about 3–8.5 μ broad, occasionally with claviform terminal members, hyaline ; intermixed with non-gelatinizing elements which originate in the hypodermium and tending to ascend beyond the epicutis forming the fibrillose scales of the pileus, ending up in mucronate, spherocystoid (e.gr. 17 × 13 μ) or otherwise shortened terminal members or excrescencies. Hypodermium broad, melleous, with intracellular pigment, formed by a cutis of non-gelatinous broad hyphal elements, often separating into one- to three-celled bodies, rarely very slightly incrusted, with firm but mostly thin or scarcely thickened wall, up to 17 μ broad.

On living and dead trunks of dicotyledonous trees, for example *Salix* or *Nothofagus*, fruiting in fall (March to May).

Material studied : ARGENTINA : Neuquén : Quetrihué, 13–V–1952, Singer M 514 (LIL).—Buenos Aires : San Isidro, 9–IV–1966, Singer S 705 (BAFC).—CHILE : Llanquihue : Peulla, 20–III–1959, Singer M 1881 (BAFC).

This might be confused with *A. montagnei* var. *montagnei* which differs in the absence of a gelatinized epicutis, however reduced, and in the strongly astringent taste of the flesh. *A. sparrei* var. *elaeodes* differs principally in the gelatinized layer accompanying the mediostratum of the lamellae and the somewhat larger and broader spores as well as some secondary characters (stipe often tapering downwards, pileus more often umbonate, annulus more persistent in an average, cheilocystidia tending to be frequently broader etc.), including slightly more cream colored lamel-

lae even in young and fresh specimens. We have not seen the type from New Zealand but believe it to be the same species judging by the description. *A. novaezelandiae* is apparently more commonly seen in Central Argentina than in Patagonia or South Chile, whereas *A. sparrei* var. *elaeodes* has thus far been collected only in the South. However, more collections in South America and even in North America will be needed in order to establish the true area of distribution of all the species of the *A. mellea*-complex.

ARMILLARIELLA TABESCENS (Scop. ex Fr.) Sing., Lilloa 22 : 216. 1951.

A complete description with a list of synonyms of this evelate species see Singer, in Flora Neotropica: Omphalinae, 1969 (in print).

Omphalina

OMPHALINA ANTARCTICA Sing., Sydowia, Beih. 1 : 16. 1956.

This species is fully described and illustrated in Contr. Inst. Antarct. Arg. 71 : 10. 1962, fig. 11 ; see also Sydowia l.c., fig. 1.

OMPHALINA CHILENSIS (Mont.) Sing., Sydowia 8 : 105. 1954.

Agaricus chilensis Mont. Ann. Sc. Nat. II, 8 : 368. 1837.

Description see Montagne in Gay Hist. Chile 7 : 335, 1850 and Singer, Sydowia 8 : 105. 1954.

OMPHALINA GRISEOPALLIDA (Gesm.) Quél., Enchir. p. 44. 1886.

A complete description of the Fuegian fungus as observed by us as well as a complete synonymy was given by Singer in Sydowia 6 : 189. 1952. We have compared this with the type of *A. griseopallidus* and *A. griseolus*.

OMPHALINA PYXIDATA (Bull. ex Fr.) Quél., Ench. p. 44. 1886.

A complete description can be found in Singer, Flora Neotropica, Omphalinae, 1969 (in print), with synonymy. Chilean material has been observed in the province of Llanquihue, Peulla, 20–III–1959, Singer M 1923 (SGO).

OMPHALINA DEFIBULATA Sing., Sydowia 6 : 190. 1952.

Description, see there.

Gerronema pseudomurale (Speg.) Sing. comb. nov.

Agaricus pseudomuralis Speg., Bol. Acad. Nac. Cience. Córdoba 11: 143. 1887.
Mycena pseudomuralis (Speg.) Sacc., Syll. Fung. 9 : 36. 1891.

Pileus lateritious-orange to rusty or orange rusty ("ferruginous" M & P), the margin frequently paler, more light salmon orange, very finely and innately subfibrillose-subtomentose or glabrous, not viscid, estriate, but wet larger and thinner specimens usually up to one third of the radius transparently striate and often also sulculate, convex, soon with depressed center, eventually applanate to concave, (6)–13–19 mm broad.—Lamellae ochraceous to pinkish ochraceous and slightly paler toward the edge (e.gr. 11–E/F–6, M & P), rather narrow to rather broad, with entire, often somewhat obtuse edge, subclose or close to subdistant, adnate with decurrent tooth or decurrent, but sometimes merely attingent when the stipe is widened into the pileus, normally thick to relatively thickish.—Stipe concolorous with the pileus or more rusty-tawny (13–B–11, M & P), very finely innately subtomentose or glabrous, smooth, not viscid, equal or tapering down from a widened apex, tubulose, sometimes flexious, 14–36 × 1–2–(5) mm ; basal mycelium white, not abundant.—Context inodorous.

Spores 6–11 × 3.5–6 μ, short ellipsoid to almost oblong, sometimes subfusoid, with homogenous or almost homogenous thin to moderately thin smooth wall, hyaline, inamyloid, often with amorphous oily contents or a single guttula.—Hymenium consisting of basidia and a few, very inconspicuous and scarce filamentous cheilocystidia; basidia 22–7 × 6.5–9.5 μ, (2)–4-spored, or 2–4-spored (the 2-spored basidia producing spores 9.5–11 μ long) ; cystidia none.—Hyphae with numerous secondary (clampless) septa or without them, always numerous clamped septa present, walls inamyloid; hymenophoral trama regular, somewhat interwoven in age.—Epicutis of pileus—a cutis of non-gelatinized, smooth filamentous hyphae, but occasionally some hyphal cells broadened and superficially interwoven, but without any well differentiated dermatocystidia, without pigment incrustations, the pigment pale orange tan in KOH and intracellular and dissolved, but individual hyphae under oil immersion appearing hyaline.

On humus or gravelly soil, among mosses or hepatics in moist places, gregarious, fruiting in fall and winter.

Material studied : CHILE : Valdivia : Hueycolla, in *Aextoxicum-Eucryphia* woods without *Nothofagus*, 4–V–1967, Singer M 6728 (SGO). —Colchagua : Pumanque, 26–VII–1967, W. Lazo PU-127 (SGO).

The type from Argentina, Staten Island, Port Cook, March 1882, is not

available at LPS. However, considering the characteristic shape and color of the species, our material cannot be anything else, and the data given by Spegazzini agree very well with ours.

Gerronema versatile (Bert. & Mont.) Sing. comb. nov.

Agaricus versatilis (Bert. & Mont.) Ann. Sc. Nat. II. 8 : 370. 1837.
Omphalia versatilis (Bert. & Mont.) Sacc., Syll. Fung. 5 : 333. 1887.

Pileus hazel (near "sayal br." M & P), dried more dusky and fuscous (between "auburn" and "English oak" M & P), glabrous on margin, scurfy-fibrillose or covered with a dirty colored felty-squamulose scurfy mass in the center, dried under a lens appearing slightly innately fibrillose-striped or lined, convex, umbilicate or depressed in the center almost from the beginning, not viscid, with very slightly transparently striate extreme margin and short shallowly sulcate margin when mature, reaching 23 mm in diameter.—Lamellae whitish, with a slight purplish-pinkish tint, at first subclose, later subdistant, entire, not forked, rather narrow, not intervenose, often with somewhat darkened edge, decurrent.—Stipe dirty whitish to concolorous with the pileus, glabrous or subglabrous, not viscid, solid or stuffed, but later becoming hollow in its lower portion, often central, more rarely eccentric or lateral-spatuliform, 10–50 × 1–3 mm ; basal mycelium scanty, white.—Context white at least when dried, inodorous.

Spores (5.5)–7–9 × (4)–4.5–5–(6) μ, ellipsoid, thin-walled, smooth, hyaline, inamyloid.—Hymenium consisting of basidia and cystidia, the former 22–43 × (5.5)–8–8.5 μ, 4-spored; cystidia both on edges and sides of the lamellae, more scattered away from the edges, 37–52 × 6–7 μ, rarely filamentous without basal thickening, mostly filamentous with broadened base, at times with indistinct nodules at or near apex, at times with a short mucro instead of a filamentous apex, at times ampullaceous, hyaline, thin-walled, not acute.—Hyphae with clamp connections, inamyloid, not gelatinized anywhere, the hymenophoral trama of strongly interwoven hyphae with general axial trend, hyaline in KOH.—Epicutis of pileus consisting of rather dense elongated and appressed hyphae which are smooth, even those of the scurfy covering, variable in breadth, all thin-walled.

On earth walls and on the ground among grasses outside the woods, fruiting in winter, singly and in small subcespitose groups.

Material studied : CHILE : O'Higgins : Rancagua, coll. Bertero in June 1828 (FH), typus.—Colchagua : Pumanque ; leg. W. Lazo PU-138, winter 1967 (SGO).

This species, although with all the characters of the genus *Gerronema*, and undoubtedly a good representative of this genus, perhaps closest to

the *Fibulae* where, because of the lack of an orange pigment, it might be compared with *G. setipes,* is nevertheless also characterized by its extremely variable habit, with tendency to be pleurotoid. This is a very characteristic species of the Central Chilean flora, but the southern limits of its area of distribution are thus far unknown.

GERRONEMA FIBULA (Bull. ex Fr.) Sing., Publ. Inst. Micol. Univ. Recife 304: 13. 1961.

A complete description and a complete list of synonyms can be found in Singer, Flora Neotropica, Omphalinae, 1969 (in print).

Gerronema minutissimum Sing., spec. nov.—Pileo livido-fuscidulo-griseo in centro ("oak buff" M & P), ceterum pallide murino ("Long-beach" M & P) et radiatim pallido-striato, per tertiam partem radii pellucide striato et distanter sulcato, glabro, convexo, centro subdepresso, 3 mm lato.—Lamellis albo-cinerascentibus, angustissimis vel angustis, acie subobtusis, distantibus, arcuatis, decurrentibus.—Stipite griseolo ("Arizona" M & P), glabro, ad basin strigoso, subaequali, ± 6 × 0.3 mm; mycelio basali pallide albicante, tomentoso.—Contexto inodoro.—Sporis ± 5.2× 3.2 μ, ellipsoideis, levibus, hyalinis, inamyloideis.—Hymenio e basidiis consistente ; eis 18–21 × 6–6.3 μ, tetrasporis, nonnullis ad basin sine fibula furcatis, omnibus sine fibulis ; cystidiis nullis.—Hyphis tramatis sublaxe dispositis sed haud manifeste gelatinosis in tramate hymenophorali et in tegumentis, defibulatis, inamyloideis, pigmento membranali aut incrustante omnio destitutis, hyalinis, 2–6 μ crassis.—Epicute pilei paullum differente, ex hyphis in KOH pigmento apparenter destitutis haud incrustatis, repentibus, filamentosis, levibus efformata.—Ad lignum putridum inter muscos. Typus in Chile, Llanquihue, Peulla, 22–III–1959 a R. Singer collectus et sub no. M 1998 in BAFC depositus est.

This species is remarkable because of its small size. Its structure reminds one of *G. albidum* which is larger and more whitish.

GERRONEMA MINUTUM (Sing. & Digilio) Sing., Sydowia 15 : 50. 1961.

A complete description of this species was published by Singer, Nova Hedwigia 7: 90. 1964. G. *minutum* is extremely common in both Patagonia and South Chile in and outside the forest, and occurs at times in very large numbers.

Material studied: ARGENTINA: Rio Negro: between Laguna Frías and Paso de las Nubes, 3–V–1964, *Fitzroya* forest with scattered *Nothofagus,* Singer M 3902 (BAFC).—Laguna Frías, 2–V–1964, on decayed wood, Singer M 3854 (BAFC).–Neuquén: Quetrihué, meadow, 14–V–

1952, Singer M 576 (LIL), typus.—16–V–1962, Singer M 667 (LIL), paratypus.—Lago Correntoso, 20–IV–1965, Singer M 5090 (BAFC).—Puerto Manzano, 22–IV–1964, among *Austrocedrus* needles, Singer M 3413 (BAFC).—Arroyo Frutillas, 28–IV–1964, Singer M 3603 A (BAFC).—CHILE : Osorno, Volcán Osorno, 12–V–1967, Singer M 6855 (SGO).—Valdivia ; Chivería, 7–V–1967, Singer M 6751 (SGO).

Callistosporium

Callistosporium luteofuscum Sing., Lilloa 26 : 115. 1953. Var. **maior** Sing. var. nov.—Pileo atrocinnamomeo-brunneo vel castaneo vel spadiceo (e.gr. "russet" M & P), partim pallidiore vel magis flavescente, in siccis sordide ochroleuco vel pallide brunneolo, glabro, levi, haud viscido, convexo, plerumque subumbonato vel umbonato sed interdum centro depresso, 28–80 mm lato.—Lamellis sordide ochraceo-pallidis vel citrinis ("Leghorn", 9–F–3), in exsiccatis saepe lilaceo-purpureis (8–H–4 vel 48–J–1, M & P), adnexo-subliberis dente irregulariter subdecurrente vel adnatis vel decurrentibus, confertissimis, confertis vel subconfertis, mediocriter latis, rarius angustis.—Stipite pileo concolori vel fusco-brunneo, ad apicem frequenter pallidiore, haud viscido, glabro, aequali vel basin versus attenuato, 20–250 × 2–20 mm, nonnumquam compresso, mycelio basali sparso interdum subnullo.—Contexto inodoro, miti. Sporis 4–7 × 3.3–4.5 μ, hyalina membrana livi inamyloidea praeditis, intus guttula vel guttulis flavidulis aut corpusculo hyalino leuco-pigmenti, quod interdum in succo cellulari dissolvitur aut in corpusculum pigmenti sanguinei-rubri transformatur.—Hymenio basidiis consistente ; basidiis 19–28 × 5.2–6 μ, tetrasporis, clavatis vel subclavatis, KOH ope in praeparationibus exsiccatorum rubido-fulvescente-pallidis in strato crasso, intus ita ut sporae pigmentatis. Cystidiis nullis ; cheilocystidiis nullis.—Hyphis defibulatis, inamyloideis, in tramate hymenophorali rubescente vel purpureo-rubescente ($\tilde{N}H_4OH$, KOH), multis cellulis praecipitationibus granulosis rubris gaudentibus, ex hyphis parallelis, in mediostrato minus pigmentatis quam in strato laterali ; hyphis pilei tramatis filamentosis vel crassis voluminosisque.—Epicute pilei cutem efformante, hyphis subintertextis vel intertextis densiuscule dispositis, 2–4 μ latis, subhyalinis fere in KOH, levibus, raro excrescentiis sparsis minusculis hemisphaericis ornatis (e.gr. 6 × 5 μ) ; hypodermio in KOH vulpino-rubro pigmento intracellulari, hyphis repentibus et (ita ut in epicute) haud gelatinosis, hic usque ad 15 μ latis.—Ad lignum emortuum nec non ad humum lignosum Acaciae, Aextoxici, aliarumque arborum frondosarum. Typus varietatis in SGO conservatur, VI–3.

Material studied : CHILE : Valdivia : Hueycolla, 2 km from coast, in *Aextoxicum-Eucryphia*-woods, 4–V–1967, Singer M 6724 (SGO).—Cuesta Sta. Elvira, 14–V–1967, M 6898 (SGO).—Llanquihue : 10 km north of Colaco, 9–V–1967, Singer M 6816 (SGO).—Valparaiso : Viña del Mar, 16–VII–1966, W. Lazo VI–3 (SGO), typus.

Macrocystidia

MACROCYSTIDIA CUCUMIS (Pers. ex Fr.) Heim, ex Josserand, Bull. Soc. Mycol. Fr. 49 : 376. 1934.

We add a description of our South American collections :

Pileus dark reddish chestnut ("Mohawk" to "Maracaibo" M & P), over one third or one fifth of the radius transparently striate and mostly also sulculate, glabrous, conic to convex, with an obtuse or acute papilla, at times almost semiglobate, eventually more or less applanate, but retaining the papilla, not viscid, 17–29 mm broad.—Lamellae flesh color ("golden wheat" to "sundown" M & P), broad, close to subclose, tetradymous, varying from free or rounded-adnexed to adnate ; spore print ocher reddish.—Stipe deep reddish chestnut ("cocoa", "Mandalay", "mohawk" M & P), usually paler on apex, equal or subequal, 25–40 × 1.2–2.6 mm, pruinate.—Context partly concolorous with surface, partly paler, odor farinaceous, later with a more or less strong fishy component.—Spores 8–10 × 4–5.7 μ, oblong to ellipsoid, mostly oblong, smooth with heterogeneous but thin although firm wall, inamyloid, stramineous in KOH.—Hymenium of basidia and gloeocystidia, the former 6.5 μ broad and 4-spored, the latter 35–80 × 5.5–17 μ, fusoid or subulate, tapering to a subacute or acute, or effilate-acute apex, hyaline in NH_4OH with thin wall which has an indistinct inner delimitation, with opaque contents but only weakly and partially blue in cresyl blue mounts (thus not all strictly of the gloeocystidial type), numerous on the sides, very numerous on the edges of the lamellae.—Hyphae with clamp connections, inamyloid ; hymenophoral trama regular, not gelatinized.—Epicutis of pileus consisting of very numerous erect or ascendant dermato-gloeocystidia of the same type as the hymenial ones but more uniformly and stronger bluing in cresyl blue mounts. Pruina of the stipe also consisting of bunches of gloeocystidia ; subjacent layers of pileus and stipe consisting of subparallel to parallel hyphae, these fulvous from a thinly and scatteredly incrusting pigment.

In mixed ectotroph woods and anectotrophic woods on the ground, in groups. Fruiting in fall.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 22–IV–1964, Singer M 3403 (BAFC).—CHILE : Valdivia : Hueycolla, 1/4–V–1967, Singer M 6565 (SGO).

Pleurocollybia

Pleurocollybia paradoxa Sing. spec. nov.—Pileo sordide alutaceo, leniter concentrice circinato sed haud radiatim sulcato striatove, glabro, haud viscido, convexo vel applanato, 10–11 mm lato.—Lamellis candidis, angustis vel sublatiusculis, confertissimis, lateraliter concurrentibus, simplicibus, integris.—Stipite nullo.—Contexto subinodoro.—Sporis 3–5 × 2–2.5–(3) μ, teretis, hyalinis, levibus, inamyloideis.—Basidiis 11–16 × 3 μ; cystidiis cheilocystidiisque nullis.—Hyphis ad septa fibulatis vel defibulatis in una praeparatione, haud gelatinosis, in tramate hymenophorali regulari vel subregulari, intertextis, densiusculis, 1–10 μ latis, elongatis, parietibus 0.5–0.7 μ usque diametro, in subhymenio tenui-tunicatis, apparenter subcellularibus, numquam gelatinisatis.—Epicute pilei densa, hyphis superficialibus nonnihil tenuioribus quam subjacentes, ± 2.5 μ, infra eas hyphis 8–10 μ latis visis, omnibus levibus et rarissime nodulis admodum sparsis ornatis vel minutissime subasperulatis, haud gelatinosis ; dermatocystidiis nullis.—Ad lignum emortuum in silva pluviali temperata amycorrhizica, autumnalis, raro. Typus (M 6713) a R. Singer in CHILE : Valdivia, Hueycolla, 4–V–1967 lectus et in SGO depositus est.

Leptoglossum

LEPTOGLOSSUM LOBATUM (Pers. ex Fr.) Ricken, Blätterp. 1 : 6. 1910.

Cantharellus lobatus Pers. ex Fr., Syst. Mycol. 1 : 323. 1821.
Merulius uliginosus Pers., Mycol. eur. 2 : 22. 1825.

This species was found by the present author in Tierra del Fuego (M 323, LIL) and by E. Horak in the Antartic (deposited in the collections of the Instituto Argentino Antártico, Buenos Aires) ; see also discussion in Persoonia 2 : 53. 1961.

Resupinatus

RESUPINATUS OMPHALINOIDES Sing. in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 150. 1965.

Description see there.

RESUPINATUS STRIATULUS (Fr.) Murr., North American Flora 9: 242. 1915

Pileus fuliginous ("Negro"), glabrous, sulculate at margin, attached with a small area of the sterile surface, convex, obtuse, 4–5.5 mm broad.—Lamellae fuliginous ("Cordovan"), rather narrow, subclose, concurrent.—Context subfuliginous, inodorous.

Spores 5.2–6 × 4.8–5.2 μ, globose to subglobose, smooth, hyaline, inamyloid.—Hyphae with clamp connections, incrusted by fuliginous-fuscous pigment, in hymenophoral trama and trama of the pileus gelatinized.—Epicutis with the structure of a *Marasmiellus* sect. *Rameales*.

On dead culms of *Chusquea* and on branches of *Drimys*, fruiting in spring and summer, probably also in fall.

Material studied: ARGENTINA: Isla de los Estados, March 1882 (LSP).—CHILE: Llanquihue: El Frutillar, 16–IX–1967, Singer M 7562 (SGO).

This species was compared and is definitely different from *R. applicatus*. The above description is that of our M 7562 ; Spegazzini did not annotate his collection from Staten Island, but it is undoubtedly the same. The substratum is given as *Fagus betuloides*, but an anatomical analysis of the substratum proved it to be *Drimys*. This does not mean that *R. striatulus* does never occur on *Nothofagus* wood. Our determination of this species corresponds to our interpretation of the Friesian concept of this species. Coker's interpretation of *Pleurotus striatulus* differs in size, color, and habitat. That of Kühner & Romagnesi appears to be the same as ours.

RESUPINATUS APPLICATUS (Batsch ex Fr.) S. F. Gray, Nat. Arr. Brit. Pl. 1: 617. 1821.

Pileus dark silver-gray, then fuliginous-gray, rarely purplish fuliginous, often also fuliginous-fuscous, generally uniformly colored, rarely paler towards the margin, smooth or with distant faint ribs, white woolly-fuzzy all over, but in marginal zone soon appearing merely subpruinate and only under a lens thinly fuzzy, almost circular, convex, eventually applanate, attached with an area of the sterile surface.—Lamellae silver-gray or cinereous, soon becoming fuliginous blackish, but edge area mostly white, concurrent, rather broad, or rather narrow (2–3 mm), not intervenose, didymous to tetradymous.—Stipe none.—Context concolorous with the surfaces, elastic, odorous.

Spores 5–6.5 × 3.5–5.5 μ, subglobose, smooth, hyaline, inamyloid.—Basidia 18.5–26 × 6–7.5 μ, mostly 4-spored, sometimes some 2-spored ones intermixed, at times somewhat thickwalled ; cystidia none ; cheilocystidia making the edge partly heteromorphous, irregularly shaped,

clavate, or hyphous-ramose, some ventricose and capitate, often incrusted. —Hyphae with clamp connections, strongly gelatinized in hymenophoral trama as well as the pileus trama, subregularly arranged in the hymenophoral trama, but interwoven and narrow and not gelatinized in the subhymenium.—Epicutis (fuzz) of ramified hyphae e.gr. 31 × 4 μ, with lateral and/or apical outgrowths, hyaline and with rather thin walls, somewhat reminding one of the structure of the epicutis in *Marasmiellus* sect. *Rameales*, some with crystalline incrustations ; pigment of the non-gelatinized hyphae membranal and partly incrusting, dark.

On dead wood, for example myrtaceous branch, fallen to the ground ; fruiting in spring and, perhaps, in fall in Chile.

Material studied : CHILE : Santiago : Cerro Robles, in a ravine, east-exposed and very shady, 21–IX–1967, Singer M 7777 (SGO).

RESUPINATUS CHILENSIS Sing., Pap. Mich. Acad. Sc. Arts & Lett. 32: 134. 1948.

Description there. This species had been transferred to the genus *Asterotus*, but this transfer is erroneous.

Asterotus

Asterotus graminum Sing. spec. nov.—Pileo griseo, siccitate griseo-fusco et albo-pruinato, macroscopice glabro, pendulo, cyphelliformi, dein subpileato vel Otidearum modo unilateraliter extenso, adhaerente substrato una area minuta, dein in pseudostipitem brevissimum extensa, 1–2 mm lato.—Lamellis griseis, latis, albomarginatis, simplicibus, subconfertis, concurrentibus.—Stipite nullo.—Contexto inodoro.—Sporis 5–5.5 × 3.5–4 μ, ovoideis vel breviter ellipsoideis vel ellipsoideis, levibus, hyalinis, tenui-tunicatis.—Hymenio e basidiis 16–17 × 4.5–6.2 μ, hyalinis, clavatis, tetrasporis efformato et structura hypharum asterostromelloide ad aciem marginato ; cystidiis nullis.—Hyphis filamentosis, magna e parte gelatinisatis, fibuliferis, 1.5–4 μ latis, in tramate hymenophorali regulari hyalinis et subgelatinosis, in tramate pilei maxima e parte gelatinisatis, laxe dispositis, hyalinis, filamentosis.—Epicute pilei e strato asterostromelloideo efformata, hyphis sub angulo 90° vel ampliore ramificatis et ramulis secundario-diverticulatis excrescentiis brevibus obtusis vel nodis.—Ad Cortaderias in zona subalpina gregatim, Martio fructificans. Typus a R. Singer (M 1733) in ARGENTINA ; Neuquén, Cerro Colorado prope refugium lectus et in BAFC depositus est.

This species has narrower spores than *Resupinatus striatulus* and is also distinguished from that species by a smooth pileus which is either higher than broad or broader than high, and attached to abundant white basal

mycelium. The subhymenium, as in *R. striatulus* is non-gelatinous. The size of the carpophores is smaller than in the *Resupinatus*. The structure of the epicutis and the edge of the lamellae induces me to insert this in *Asterotus* rather than in *Resupinatus*. The limits between the two genera are open for revision.

Hohenbuehelia

Hohenbuehelia spegazzinii Sing. ex Sing. spec. nov.

Pleurotus petaloides var. *victoriensis* Speg., Bol. Acad. Cienc. Córdoba 25: 12. 1921.

Hohenbuehelia spegazzinii Sing., Sydowia 8 : 117. 1954 (new name not valid because of lack of full reference after 1953).

Pileo fuligineo ("Negro", "African", ad marginem interdum 11–C–4), rarius usque ad colorem bisum vel pallide fusco-cremeum pallescente, primum albo flocculoso-fibrilloso, dein pubescente-subvelutino, impolito, glabrescente, levissimo, circulari vel reniformi, convexo, demum concavo, transiente in stipitem vel pseudostipitem lateralem per zonam canaliculato-depressam, 30–60 mm lato, plerumque 40–45 mm lato.—Lamellis alutaceo-pallidis, carnem pilei versus interdum griseis, confertis, nonnullis furcatis, angustioribus (usque ad 4 mm) irregulariter sed longe decurrentibus.—Stipite (vel pseudostipite) haud manifeste delimitato, albido vel griseo, glabro, latus ad superius in pileum transeunte, ibidem applanato vel convexo, usque ad 15 × 10 mm.—Contexto albo, zona peripherica superiore et inferiore grisella ; odore et sapore "polyporoideis" subacidulis, haud farinaceis.

Sporis (5.7)–7.3–9.5 × (2.8)–3.7–4.5 μ, plerumque cylindraceis, vel oblongis, frequenter allantoide-curvulis, raro ellipsoideo-elongatis, hyalinis, levibus, hyalinis, inamyloideis.—Hymenio : Basidiis 24–38 × 6.7–8.2 μ, clavatis, hyalinis, sterigmatibus 4–4.7 × 1.7–2 μ. Metuloidibus sat numerosis, sed vix confertissimis, 34–95 × 8–12.5 μ, fusiformibus, plerumque acutissimis, rarius angustato-subacutis, crasse tunicatis, membrana 1.3–4.8 μ crassa, ad apicem crystallino-granularibus, in solutione azurei cresylici non metachromaticis, sed pH neutralis vel subalcalini ope eiusdem tincturae metachromaticis i.e. atroamethystino-lilacinis in parietibus, pH neutrali strato externo tenuissimo tantum discolorato, in subalcalino ex toto, inamyloideis in solutione Melzeri ; paucis cystidiis haud metuloideis interdum obviis (tenui-tunicatis). Cheilocystidiis 18–40 × 4–5.5 μ, plerumque ventricosis in parte inferiore, apice effilatis sed saepe capitulatis vel bicapitulatis, interdum ad apicem massa globosa gelatinosa obsitis, rarius plus minusve constrictis vel ampullaceis.—Hyphis in solutione azureo-cresylica haud metachromaticis, inamyloideis

non vel vix gelatinosis, neque in tramate hymenophorali subregulari, ubi axillariter dispositae sunt sed plus minusve intertextae, filamentosae, membrana tenui vel subtenui instructae, neque in zona subhypodermiali, ubi stratum homogeneum quinquies strato cuticulari diametro superans formant, omnibus fibuligeris.—Epicute ex hyphis hyalinis tenui-tunicatis repentibus efformata, sed dermatocystidiis 13–48 × 3.5–6.8 μ sparsis vel aggregatis, ventricosis, saepe constrictis, vel cylindraceo-capitatis, vel cylindraceis vel ventricosis vel ampullaceis, plerumque subobtusis vel obtusis, tenui-tunicatis, ex hyphis 1.5–2.5 μ crassis filamentosis natis ; hypodermio fuscidulo cutiformi, plus minusve 55 μ diametro (ita ut epicutis), haud gelatinoso.

Ad truncos, praecipue nothofagineos, autumno. Typus in BAFC conservatus.

Material studied: ARGENTINA: Neuquén: "Cerro Cortinario" above Puerto Manzano, 1100 m alt., on *Nothofagus pumilio* wood, 11–IV–1963, Singer M 3378 (BAFC), typus.—CHILE : Malleco : Victoria, on dead branches, May 1918, leg. Spegazzini (LPS), typus of *P. petaloides* var. *victoriensis* Speg.

HOHENBUEHELIA PYCNOPHYLLI Sing., Mycol. 47 : 770. 1955.

See original description, l.c. Additional material collected by Singer (T 3700) in Argentina, Tucumán, Infiernillo, 12–IV–1961, on *Azorella,* had the pileus "cattail", then between "broncho" and 15–H–12, M & P, some places reaching "London smoke", separable, subviscid, shining surface layer, light sordid alutaceous lamellae up to 2.2 mm broad, close, and laterally extended stipe which was brown or fuscous, 4–9 × 1–4 mm, inodorous white context with farinaceous but mild taste.

HOHENBUEHELIA ROIGII Sing., Rev. Fac. Cienc. Agrar. Un. Nac. Cuyo 12: 165. 1965 (publ. 1967).

See original description.

HOHENBUEHELIA PHALLIGERA (Mont.) Sing., Lilloa 22: 256. 1951.

Agaricus phalligerus Mont. in Gay, Hist. Nat. Chile 7 : 340. 1850.

Crepidotus phalligerus (Mont.) Sacc., Syll. F. 5 : 886. 1887.

Pileus porphyry fuscous or fuscous, coarsely tomentose, the tomentum pallid and perhaps giving the young caps at times a bluish sheen, smooth, conchate, in age often lobulate at margin, up to 50 mm broad.—Lamellae white, close or crowded, not drying yellow or only in part pale buffy, narrow, inserted, decurrent.—Stipe not developed, but a sterile horizontal base often extends from the pileus proper which is hardly differentiated from above, while the lamellae run almost down to the point of attachment.—Context inodorous when fresh.

Spores (5)–6.5–8.5–(10) × (3)–3.5–4.2 μ, ellipsoid, oblong, or cylindric, mostly ellipsoid to short cylindric, very frequently somewhat curved and almost sausage shaped so that the interior side of the spores is concave, hyalin smooth, inamyloid.—Hymenium consisting of basidia, and metuloids, borded by cheilocystidia. Basidia 19–30 × 6 μ, 4-spored. Metuloids numerous, 35–97 × 7–32 μ, fusiform, some more clavate, with acute, more rarely acutely mucronate or obtuse apex, strongly incrusted in their upper portion by a coarse crystalline granular incrustation which is hyaline, the wall very thick (3–11 μ), inamyloid, hyaline or pale stramineous yellowish. Cheilocystidia making the edge heteromorphous, 16–23 × 3–6 μ, ventricose with short or long apical appendage, which is either acute or subacute, more rarely obtuse and then often capitate or subcapitate, the capitulum 2–2.5 μ in diameter, the walls hyaline and thin, the capitulum at times separated by a septum from the main cell.—Hyphae inamyloid, with clamp connections ; hymenophoral trama regular-subirregular, consisting of interwoven hyphae which are hyaline, and thin- to thick-walled, not or scarcely gelatinized ; subhymenium appearing subcellular, consisting of very small and short, non-gelatinized elements which are thin-walled. Trama of the pileus with an upper subhypodermial gelatinized layer which is 300–450 μ thick, hyaline, consisting of filamentous non-incrusted hyphae which ascend under an angle of approximately 30° towards the hypodermium ; below this there is a separation layer which is much like the hypodermium and 45–80 μ thick ; below the separation layer, there is a non-gelatinized layer of thin to mostly thickwalled hyphae 550–600 μ thick and hyaline.—Epicutis formed by hyaline bunches of septate hyphal hairs which are ascendant to suberect and form a trichodermium, about 200 μ thick or at least the hyphae of this layer projecting about 200 μ over the hypodermium, its terminal cells e.gr. 35 × 4.5 μ ; hypodermium—a cutis of thin (1–3.5 μ) filamentous hyphae which are grayish bister with fuliginous pigment incrustations, forming a layer of 40–50 μ diameter.

On dead wood.

Material studied : CHILE : Llanquihue : about 10 km north of Colaco, 9–V–1967, Singer M 6815 (SGO).—Type locality not indicated, typus (P).

Spegazzini (Bol. Acad. Nac. Cienc. Córdoba 25: 18. 1921) who considered this a *Crepidotus* (ad did Montagne) describes the lamellae as brick color (Montagne : lion reddish) but this color derives from badly dried material ; his material was collected by J. A. Campo near Victoria on branches and trunks of *Nothofagus obliqua.*

Horak (Darwiniana 14 : 362. 1967) describes the specimens he found in the Spegazzini herbarium under *A. puellula* Speg. as *Geopetalum puellula* (Speg.) Horak. A revision of this material by the present author

revealed that this is not a species of *Geopetalum* but a *Hohenbuehelia* aff. *phalligera*, probably young specimens of this species, but *A. puellula* as described by Spegazzini is obviously not this, inasmuch as these specimens are definitely devoid of a stipe, and even a superficial comparison of the specimens with the original diagnosis shows that the latter cannot under any circumstances, even allowing for poor observation, represent the material from which Spegazzini's diagnosis resulted. The true *A. puellula* is probably the same as *Pholiota privigna*.

HOHENBUEHELIA NIGRA (Schwein.) Sing., Lilloa 22 : 256. 1951.

Our Chilean material comes from Colchagua, and was found on wood, near Pumanque, by W. Lazo ; additional material was found by Singer on wood of *Populus* near La Plata, both in late fall.

A description of this species can be found in Coker, Elisha Mitch. Sc. Soc. Journ 60 : 75. 1944. Our material is not identical with the one Singer & Digilio described (Lilloa 25 : 118, 1952) under this name and which, among other characteristics, has spores smaller than those of the true *H. nigra*.

The spores of the latter were found to be 6–8.5 × (2.5)–3.5–4.8 μ.

Hohenbuehelia patagonica Sing. spec. nov.—Pileo atrobrunneo-umbrino, macroscopice glabro, subtiliter albofibrilloso in parte posteriore-inferiore, linguiformi, 35–60 mm longo spathuliformi-recurvato et subhorizontali *H. petaloidis* modo.—Lamellis cremeo-albidis, confertissimis, rarius confertis, angustis, descendentibus, profunde decurrentibus.—Stipite albido, verticali vel subverticali eius *H. petaloidis* modo et eiusdem magnitudine. —Contexto albido vel albido-fuscidulo, odore farinaceo vel subnullo.— Sporis 5–8 × 3.3–4.7 μ, ellipsoideis, hyalinis, levibus, applanatione suprahilari gaudentibus, inamyloideis.—Hymenio e basidiis et cystidiis metuloideis consistente et cheilocystidiis marginato. Basidiis 20–30 × 5.5–6.5 μ, tetrasporis. Metuloideis 36–100 × 9–22 μ, crasse tunicatis (membrana 0.7–5.5 μ diam.), fusiformibus, in parte media latissimis, acutis rarius subacutis vel appendice murcroniformi apicali acuto gaudentibus, numerosis, hyalinis vel pallidissime stramineis. Cheilocystidiis 16–20 × 4–5 μ, ventricosis, sub apice capitato constrictis (constrictione 1–1.5 μ diam.), capitulo 4–5 μ lato, numerosis, nonnullis interdum versiformibus aberrantibusque.—Hyphis fibulatis. Tramate hymenophorali subregulari.—Epicute haud gelatinosa, crassitie variabili, sed ubi crassior, ibi dermatocystidiis instructis, his cheilocystidiis similibus sed magis variabilibus ; excrescentiis hyphalibus etiam praesentibus (7–9 × 4.5 μ); sub epicute endocystidiis praesentibus, 40–80×4.5–6 μ, fusiformi-elongatis, membrana 1–1.5 μ crassa instructis, fuscidulis vel hyalinis, prostratis, granulari-

incrustatis. Zona subhypodermiali gelatinosa 55–80 μ crassa, in parte superiore hyalina, in parte inferiore fuscidula, hyphis filamentosis admodum laxe dispositis consistente quae sub angulo 30° ascendunt, sed in parte superiore subintertextae sunt. Sub zona gelatinosa hyphis radialiter dispositis, haud gelatinisatis, fuscidulis, stratum tenue efformantibus.—Ad lignum emortuum e.gr. Austrocedri chilensis, autumno. Typus ab I. Gamundí lectus in ARGENTINA: Neuquén: inter Laguna Frías et Paso Perez Rosales, 4–V–1961 et in BAFC conservatus est. Paratypus: Argentina: Lago Nahuel Huapí, Isla Victoria, 22–V–1952, Singer M 804 (LIL).

This is our only spathuloid species which, however, does not fully agree with any of the European or American spathuloid forms. It is rather rarely found.

HOHENBUEHELIA BURSAEFORMIS (Berk.) Reid, Kew Bull. 17: 304. 1963.

A complete description of this interesting species was published by Reid, l.c. We find the spores 7.5–9 × 6–8 μ, with rather thick walls and the ornamentation well visible in all media. A wide gelatinous lateral stratum or hymenopodium is seen on both sides of a section of the mediostratum which, itself, is not gelantinized. The color of the fresh pileus is mostly white, but the innermost zone of the pileus is rarely brownish ochraceous, and the whole pileus may be pale gray even when quite fresh. In the fresh material it can be seen that a lateral stipe is always rather well developed, white, up to 3–7–(12) × 1.5–4 mm.

Material studied: CHILE: Llanquihue; 10 km north of Colaco, 9–V–1967, Singer 6814 (SGO).—M 6812.—Valdivia: west slope of Cordillera Pelada at 450 m alt., Singer M 5573, 7–V–1965 (BAFC).—at 420 m, M 5568 (BAFC).—Chivería, 10–V–1965, Singer M 5721 (BAFC).—TASMANIA: Typus of *A. bursaeformis* Berk. (K).

This is obviously the same species as Berkeley's Tasmanian one, and its abundant occurrence in Southern South America gives us another example of Austral-Antarctic disjunction of the area of a single species.

The finely spinulose spores provide us with a character that separates all other known species of *Hohenbuehelia* from *H. bursaeformis* and *H. dimorphocystis* (the following species). We do not consider this character alone as important enough to separate these species from *Hohenbuehelia,* but propose for them a new subgenus of *Hohenbuehelia*:

Hohenbuehelia subgenus **Reidia** Sing., subgenus nov.—Sporis crasse tunicatis, subtiliter spinulosis. Subgenus *Hohenbuehelia* sporis levibus differt. Typus subgeneris Reidiae: *Agaricus bursaeformis* Berk.

As for synonyms of *H. bursaeformis* see Reid, l.c.

Hohenbuehelia dimorphocystis Sing. spec. nov.—Species subgeneris Reidiae; pileo melleo-ochraceo-brunneo, levi, glabro vel leniter albido-villoso, conchato, manifeste convexo, haud applanato, 12–19 mm lato.—Lamellis albis, interdum brunneo vel albo-fimbriatis, moderatim angustis vel latiusculis, confertis, adnexo-attenuatis saepeque dente decurrente adhaesis.—Stipite pileo concolori, s.l. subtiliter albo-flocculoso, frequenter curvato, excentrico, sed pilei margini appresso ita ut facile lateralis appareat, 5–10 × 2.5–3 mm; mycelio basali arachnoideo, albo.—Contexto albo vel pallido, inodoro.—Sporis (6)–7.5–8.5 × (5.3)–6–6.2 μ, ellipsoideis, subtiliter aculeolatis (spinulis 0.5–0.7 μ altis, in KOH haud dissolventibus), crasse tunicatis (membrana 1–1.5 μ crassa), area levi et applanatione depressioneque suprahilaribus destitutis, inamyloideis.—Hymenio e basidiis, cystidiolis, cystidiis, cheilocystidiis efformato; basidiis 14–18 × 6–7 μ, breviter clavatis, hyalinis, (1)–4-sporis; basidiolis subvesiculosis. Cystidiis cystidioliformibus, vesiculosis vel ventricoso-vesiculosis et pedicellatis, hyalinis, levibus, latissime rotundatis ad apicem, haud muricatis, tenui-tunicatis vel subcrassiuscule tunicatis (membrana usque ad 0.9 μ diam. sed plerumque tenuiore), 14–32 × 6–20 μ; cystidiis metuloideis ampullaceis vel fusiformibus vel subulatis, apice angusto, obtuso vel acuto instructis, ad apicem crystallis granularibus incrustatis, membrana 0.2–1 μ crassa instructis, inamyloideis, sparsis, 24–36 × 15 μ. Cheilocystidiis dimorphis (1) cystidiolis simillimis, (2) hyphalibus, intumescentia vel nodis destitutis vel praevisis, 33–60 × 3–4.5 μ, raro longioribus.—Hyphis fibuligeris, inamyloideis, in zona subcuticulari tramatis pilei duplici tantum gelatinisatis, in tramate hymenophorali regulari (ex hyphis latiusculis, 10–12 μ latis et angustioribus ± 2 μ vel paullum latioribus, his in hymenopodio, illis in mediostrato, omnibus hyalinis et tenuitunicatis composito) haud gelatinosis, optice hypharum contentu in KOH haud manifesto; strato gelatinoso tramatis pilei ex hyphis haud parallelis sed generatim repentibus-tangentialibus hyalinis, tenui-tunicatis tenuissimis, ixocutis modo dispositis; infra zonam gelatinosam tramate ipso hyalino non gelatinoso visibili.—Epicute haud gelatinosa, ex hyphis intertextis hyalinis vel melleis efformata; infra epicutem et locum hypodermii occupantibus endocystidiis subsparsis obviis; endocystidiis secundo typo cheilocystidiorum simillimis, 17–22 × 6–17 μ, hyalinis vel melleis; dermatocystidiis ad superficiem epicutis tantum sparsis, membra terminalia hypharum epicuticularium repraesentantibus, inconspicuis et cheilocystidiis typi primi et cystidiolis analogis.—Ad lignum *Eucryphiae* in silva amycorrhizica. Typus in CHILE, prov. Valdivia, in pendiente occidentali Cordillerae Peladae ad 400 m alt. 4–V–1967 a Singer, M 6880 lectus et in SGO conservatus est.

Cantharellula infundibuliformis Sing. spec. nov.—Pileo pallide carneo-alutaceo vel brunneo (e.gr. 13–J–10), glabro vel vix manifeste innate punctulato-fibrilloso, levi, primum margine incurvato, ad marginem interdum minute fimbriato (sub lente), convexo centro depresso, mox infundibuliformi, haud umbonato, 17–23 mm lato.—Lamellis carneo-pallidis, carneo-alutaceis, omnibus semel bisve furcatis, interdum repetite furcatis vel in parte marginali venoso-anastomosantes, acie plus minusve obtusiusculis, arcuatis, angustis vel moderatim latis, subconfertis, decurrentibus.—Stipite pileo concolori, glabro, levi, anguste farcto, aequali vel basin versus leniter et gradatim incrassato, rarius apice incrassato, 25–54 × 1.5–3 mm; mycelio basali sericeo-fibrilloso, albo.–Contexto albo, inodoro, miti.—Sporis 8.2–10.3 × 3.2–4.3 μ, cylindraceo-fusiformibus vel obovoideo-oblongis typi boletorum, rarius oblongo-ellipsoideis, tenui-tunicatis, hyalinis, amyloideis.—Hymenio e basidiis consistente, his ± 36 × 7 μ, tetrasporis, clavatis.—Hyphis inamyloideis, fibuligeris. Subhymenio fortiter intertexto-intermixto elementis brevibus et elongatis constante. Tramate hymenophorali e mediostrato aciem versus fortiter attenuato et strato laterali quod prope aciem solum trama format; mediostrato irregulari, intertexto, haud gelatinoso; strato laterali gelatinoso, hyphis tenuitunicatis, eis mediostrati tenuioribus, hyalinis, laxe dispositis, subirregulariter intertextis vel subparallelis, in parte externa (hymenopodio) primum leniter subhymenium versus divergentibus.—Epicute pilei cutem haud gelatinosam repraesentante, ex hyphis 2.3–8.2 μ diam., parallelis vel subparallelis efformata totis levibus, pigmento haud incrustante.—Ad terram nudam locis umbrosis silvarum, Martio, Maio. Typus (M 3861) in ARGENTINA: Neuquén, Lago Nahuel Huapí, Brazo Blest, camino a los Cántaros, M 1805 (BAFC).—Rio Negro: Laguna Frías, 3–V–1964, Singer M 3861 (BAFC), typus.

This species differs from *C. umbonata* in more distinctly gelatinized lateral stratum of the hymenophoral trama, the color of pileus and stipe (not gray), and the presence of an infundibuliform central depression instead of an umbo or papilla. It is not connected with mosses, but was once found to be attached to a culm of *Chusquea* (Bambuseae).

Pseudoclitocybe

Pseudoclitocybe martipanis Sing. spec. nov.—Pileo fuscidulo-griseo ("Adobe" M & P), margine sordide albido, pellucide striato vel sulculato per $^{5}/_{6}$ vel $^{6}/_{7}$ radii, glabro, nudo, haud viscido, leniter subhygrophano, convexo, dein centro depresso vel subapplanato, demum margine quoque applanato, non umbonato, nec papillato nec umbilicato, 17–25 mm lato.—

Lamellis sordide albidis vel pallide griseis ("Longbeach" M & P), subconfertis, rarius subdistantibus, moderatim latis, sed numquam angustis, quando maturae sint, horizontalibus vel arcuatis, adnato-decurrentibus, vix profunde decurrentibus.—Stipite centro pilei subpallidiore, unicolore et levi, glabro et nudo, subaequali, sed interdum supra partem mediam et plerumque ad basin incrassato, raro basin versus gradatim incrassato, haud viscido, 41–70 × 2–6 mm.—Contexto albido-pallido, odore Hebelomatis radicati, Clitocybis patagonicae, i.e. martii panis.—Sporis 6.5–8 × 4–6 μ ellipsoideis, levibus, amyloideis.—Hymenio basidiis consistente; his 24–28 × 7.3–8.5–(10) μ, clavatis, tetrasporis. Cystidiis et cheilocystidiis nullis.—Hyphis defibulatis, inamyloideis; subhymenio subcellulari, elementis exiguis, brevibus, hyalinis consistente, haud gelatinoso. Tramate hymenophorali regulari, ex hyphis subparallelis vel paullum intertextis, plerumque filamentosis, haud gelatinisatis, haud pigmentatis efformato.—Epicute pilei cutem haud gelatinosam repraesentante, ex hyphis levibus 3–4 μ crassis parallelis, in KOH hyalinis vel subhyalinis, pigmento destitutis efformata; hypodermio et tramate pilei ex hyphis ± repentibus sed subirregulariter intertextis, partim membrana subincrassata gaudentibus efformatis, eis hypodermii pigmento intracellulari dissoluto, pallide fuscidulo-griseo coloratis, haud gelatinosis.—Ad humum et terram in silvis mixtis, autumno. Typus in CHILE: Valdivia: Chivería, 7–V–1967 a R. Singer, M 6758, lectus et in SGO conservatus est.

Clitocybe patagonica, which, in our region, may be confused with the present species, differs (in very fresh and humid condition) in having a more hygrophanous and viscid surface with shorter striations, but can be easily distinguished by the small, inamyloid spores. The remarkable odor is the same in both species.

Clitocybula

CLITOCYBULA MELLEA Sing., Sydowia 8: 111. 1954.

Description see there.

Material studied: ARGENTINA: Neuquén: Quetrihué, 13–V–1952, Singer M 524 (LIL).—15–V–1952, Singer M 632 (LIL).—Puerto Manzano, 18–V–1952, Singer M 751 (LIL), typus.—CHILE: Valdivia: Cordillera Pelada, 1 km south of Mirador, 9–V–1965, Singer M 5639 (BAFC).—Chivería, 7–V–1967, Singer M 6749 (SGO).

CLITOCYBULA TARNENSIS (Speg.) Sing. Sydowia 8: 111. 1954.

Description see Sydowia 6: 196. 1952 under *Cantharellula tarnensis*, with synonymy. We find the pileus varying to "drab, sand" M & P, or

"olive wood" M & P; it seems that the lamellae may be light gray from the beginning. The species was now found on *Nothofagus pumilio*, *N. dombeyi*, *N. nitida*, and on not identified hardwood. In some of our specimens we have noticed a slight odor of anise.

Material studied: ARGENTINA: Tierra del Fuego, Rio Grande: Estancia Nueva Argentina, 11–II–1950, Singer M 185 (LIL).—14–II–1950, M 271 (LIL).—Ushuaia: south shore, eastern end of Lago Fagnano on the slope towards Cerro Observación, 19–II–1950, Singer M 384 (LIL).—Neuquén: Quetrihué, 13–V–1952, Singer M 525 (LIL).—16–V–1952, M 658 (LIL).—17–V–1952, Isla Victoria, Singer M 708 (LIL).—Quetrihué, 15–V–1952, Singer M 643 (LIL).—M634 (LIL).—Rincón, 13–III–1963, Singer M 3521 (LIL).—CHILE: Voces Bay toward Mount Tarn, May 1882, leg. Spegazzini (LPS), typus.—Valdivia: West slope of Cordillera Pelada, 6–V–1965, Singer M 5526 (BAFC).

Porpoloma

PORPOLOMA PORTENTOSUM Sing., Sydowia 6: 199. 1952.
Description see there.

PORPOLOMA TERREUM Sing., Sydowia 6: 201. 1952.
Description see there. Additional material from Chile, prov. Cautín and prov. Valdivia, Singer M 6540c, M 6752, M 6890 (SGO) has been observed and collected.

PORPOLOMA SEJUNCTUM Sing., Sydowia 6: 198. 1952.
Description see there.

Leucopaxillus

LEUCOPAXILLUS PATAGONICUS Sing., Sydowia 8: 111. 1954.
Description see there.

Melanoleuca

MELANOLEUCA BREVISPORA Sing., Sydowia 8: 115. 1954.
Description see there.

MELANOLEUCA LUTEOLOSPERMA (Britz.) Sing., Cavanillesia 7: 127. 1935. Var. *luteolosperma*.
Descriptions of two forms of this species, see Sydowia 8: 112. 1954.

A third form of this seems to deserve varietal distinction:

Var. **styptica** Sing. var. nov.—Pileo cremeogriseo vel fuscidulo-griseo ("prairie" vel "lariat") centro interdum fusco ("broncho", "cowboy" M & P), glabro, convexo dein depresso, 25–45 mm lato.—Lamellis cremeis, confertis, sinuatis, 4.5 mm latis, sporis in massa pallide cremeis (inter A et B chartae Crawshayi, in herbario usque ad C).—Stipite clare grisello-fusco ("Aloma"), in parte centrali saepe fusco (15-E-12 vel "dogwood" M & P), in parte basali saepe atrofusco vel fusco-brunneo ("tuscan tan" vel "Piccaninni"), innate longitudinaliter pallide fibrillosulo, aequali vel gradatim basin versus incrassato, solido, 70–95 × 3.5–7 mm; mycelio basali albo.—Contexto in pileo albo, in stipite pallido-albidulo, in parte peripherica fuscidulo, demum magis fuscidulo; sapore submiti vel leniter styptico; odore nullo.—Sporis 7–8.7 × 5–7 μ, asperis, amylaceo-ornamentatis, ellipsoideis, in KOH hyalinis.—Hymenio basidiis cystidiisque admodum sparsis et inconspicuis constituto; basidiis 25–28 × 7.7–9.5–(11.7) μ, (2)–4-sporis; cystidiis filamentosis vel anguste clavatis, apice interdum excrescentia obliqua ornatis, raro cylindrico-subventricosis et crystallis muricatis, e.gr. 30 × 6 μ.—Hyphis defibulatis, inamyloideis, in tramate hymenophorali regulariter dispositis et parallelis.—In silvis mixtis. Typus varietatis in ARGENTINA: Neuquén, Puerto Manzano, 5–IV–1963 a R. Singer M 3270 lectus et in BAFC conservatus est.

Melanoleuca myceniformis Sing. spec. nov.—Pileo in centro sordide cinnamomeo-griseo, ceterum pallido, humido, glabro, per tertium vel dimidium radium pellucide striato, convexo, umbilicato, 17–20 mm lato.—Lamellis subpallidis, mediocriter latis, subdistantibus, subdecurrentibus.—Stipite basin versus pileo concolori, ad apicem pallido, glabro, sed basi mycelioidea praeviso, leniter gradatim apicem versus attenuato, ± 73 mm longo, ad apicem 2–2.5 mm lato, ad basin 3–3.5 mm diam.—Contexto pallido, subinodoro vel inodoro.—Sporis 6–9 × 3.5–5 μ, longitudinaliter et interdum reticulatim stratulis et ornamentatione exosporiali amylacea punctiformi subgranulosis, area levi suprahilari manifesta instructis, ellipsoideis, interdum leniter subangularibus.—Hymenio e basidiis formato; his 32–38 × 5–7.5 μ, tetrasporis; cystidiis et cheilocystidiis nullis.—Hyphis defibulatis, inamyloideis; tramate hymenophorali regulari, haud gelatinoso, ex hyphis parallelis vel subparallelis firme tunicatis efformato; subhymenio fortiter intertexto, 10–15 μ lato, hyphis 2–4 μ latis.—Epicute pilei cutem constituente, hyphis parallelis haud incrustatis pigmento efformata.—Inter muscos ad humum silvestrem in silvis mixtis. Typus a R. Singer (M 5703) in CHILE: Valdivia, Chivería, 10–V–1965 lectus et in BAFC conservatus est.

MELANOLEUCA EXCISSA (Fr.) Sing., Cavanillesia 7: 125. 1935.

Description see Sydowia 6: 205. 1952. This has the larger spores like *T. excissum* sensu Bresadola. Our var. *submedia* Cavanillesia 7: 125. 1935 corresponds to *M. cinerascens* Reid, Col. Ic. rare inter. Fungi, 2: 16. 1967. Not seen in South America.

MELANOLEUCA MELALEUCA (Pers. ex Fr.) Murr., North Am. Fl. 10: 7. 1914.

Description see Sydowia 8: 114. 1954.

MELANOLEUCA VERRUCIPES (Fr. apud Quél.) Sing., Rev. Mycol. 4: 68. 1939.

Description see Sydowia 6: 202. 1952, with synonymy.

MELANOLEUCA MELANOSARX Sing., Sydowia 8: 114. 1954.

Description see there. This is a widely distributed species in both Argentina (northwestern Patagonia) and Chile, reaching the relict forests of *Nothofagus* in the prov. Santiago (M 6965).

MELANOLEUCA LIXIVIA (Fr.) Maire, Fungi Catalaunici, ser. alt., Publ. Inst. Bot. Barcelona 3: 85. 1937.

In the following lines we give a complete description of the Patagonian collections which we determine as *M. lixivia* :

Pileus grayish fuscous or fuscous with gray margin, glabrous, subhygrophanous, opaque, convex, with or without a small low umbo, 43–68 mm broad.—Lamellae gray, close, medium broad (5–6 mm), sinuate; spore print white, but becoming cream (between C and D Crawshay) when fully dehydrated.—Stipe gray to deep fuscous, at apex fibrillose to fibrillose-tomentose from a paler or pallid pruina, stuffed, equal, tapering upwards or downwards, 42–62 × 5–10 mm.—Context white, later fuscous pallid, in a peripherical zone gray to watery fuscous, soft fleshy; odor none or slightly raphanaceous; taste mild.

Spores 8.5–10.5 × 5–5.8 μ, ellipsoid, hyaline, with amylaceous exosporial verrucose ornamentation.—Hymenium consisting of basidia and cystidia ; basidia 30–34 × 10–10.5 μ, 4-spored. Cystidia on both edges and sides, 50–85 × 7–14.5 μ, fusoid to ventricose-ampullaceous, with equal or attenuate neck and crystal murication, hyaline, shorther or longer pedicellate, with thin but rather firm walls, scarce to scattered, but rather conspicuous.—Hyphae without clamp connections, inamyloid, hymenophoral trama regular.

In woods of *Nothofagus dombeyi,* fall.

Material studied : ARGENTINA: Neuquén, Lago Correntoso, 20–IV–1965, Singer M 5085 (BAFC).—25–IV–1964, Singer M 3516 (BAFC).

MELANOLEUCA LONGISPORA Sing., Sydowia 6: 206. 1952. Description see there.

MELANOLEUCA UMBRINELLA (Speg.) Sing., Sydowia 6: 204. 1952. Description, see there.

Athracophyllum

ANTHRACOPHYLLUM BERTERII (Mont.) Sing., Lilloa 22: 206. 1951. Description see Arkiv för Botanik 4: 379. 1959.

ANTHRACOPHYLLUM DISCOLOR (Mont.) Sing., Lilloa 22: 206. 1951.

Description see Sydowia 6: 188. 1952. This beautiful species is common in Chile, north to Fray Jorge, Coquimbo, both in mycorrhizal and amycorrhizal forests.

Collybia

COLLYBIA BUTYRACEA (Bull. ex. Fr.) Kummer, Führer Pilzk. p. 117. 1871.

This species has been described in the current European literature. It is common in Europe and North America, but much rarer in the natural vegetation of South America.

COLLYBIA DRYOPHILA (Bull. ex Fr.) Kummer, Führer Pilzk. p. 115. 1871.

This almost cosmopolitan species, common in Europe, Asia and North America, can be compared with descriptions and illustrations in the current European and North American literature. South American material has been described by Singer & Digilio in Lilloa 25 : 46. 1953.

COLLYBIA USHUVAIENSIS (Speg.) Sacc., Syll. Fung. 9: 32. 1891.

Pileus chestnut ("Mohawk" M & P) with paler margin, opimous but not viscid, glabrous, smooth, not innately radially fibrillose or striped, subherispheric convex, then convex, eventually sometimes applanate, 40–45 mm broad.—Lamellae pallid with somewhat brownish pallid ground, rather broad (about 5 mm), but variable in breadth, close, sinuate-adnexed, with entire edge: spore print fresh whitish, just off "A" (Crawshay) but by far not reaching B).—Stipe bright tawny ("sonora" M & P) or concolorous with the pileus and with slightly paler apex, finely fibrillose at the apex, glabrous below, but tending to become in-

nately fibrillose or longitudinally cracked, stuffed, tapering gradually towards the apex, 50–65 × 6.5–20 mm; basal mycelium sparse whitish.—Context subconcolorous-paler or whitish, fleshy, in stipe fibrous and somewhat toughish, unchanging on exposure; odor like that of *Collybia butyracea.*

Spores 6.3–6.8 × 3.5–4 μ, ellipsoid with a slight suprahilar depression, with or without a round or amorphous oil drop, hyaline, inamyloid.—Hymenium consisting of basidia and, in mature material marginate by cheilocystidia; basidia 24–32 × 6.5–7.7 μ, 4-spored. Cheilocystidia making the edge of mature specimens heteromorphous, directly continuing the tramal hyphae, extremely variable in shape and size, up to 50 μ long, reaching 8 μ in the broadest part, often crooked, mostly subclavate, but also ventricose, and effilate above into a long thin appendage 1.3–2.2 μ diam. which may to obtuse or acute, also whole cell cylindrical, sometimes subcapitate etc.—Hyphae with clamp connections, but many hyphae with numerous secondary (clamp-less) septa, thin-walled ; hymenophoral trama regular of subparallel hyphae, which are hyaline and filamentous, non-gelatinized, all inamyloid.—Epicutis of pileus consisting of appressed, repent, filamentous hyphae 1.5–11.5 μ broad, hyphal ends often rounded at the tip or subcapitulate and constricted below (constriction ± 5 μ, capitulum ± 7.2 μ diam.), with very pale diluted dissolved intracellular pigment, not incrusted and always smooth, running in all directions but the majority radially arranged, not multi-ramose (no Dryophila-structure).

On wood of *Nothofagus pumilio,* and on woody humus around it.

Material studied : ARGENTINA: Ushuaia, Spegazzini, typus (LPS).—Neuquén : "Cerro Cortinario" above Puerto Manzano, 19–III–1963, Singer M 3083. (BAFC).

COLLYBIA SUBHYBRIDA Sing. in Sing. & Moser, Mycopath. et Mycol. Appl. 26 : 151. 1965.

Description see there.

Collybia peladae Sing. spec. nov.—Pileo cacaocolori vel atrocastaneo ("cocoa", interdum usque ad "Mandalay" M & P), pallidiore inter strias marginales, sub lente paullum manifeste radiatim fibrilloso, macroscopice glaberrimo, hygrophano, dehydratatione pallescente, sed haud pallido, fortiter sulcato per 5/6 radii, convexo, dein applanato, umbilicato, 12–23 mm lato.—Lamellis brunneolis ("stroller tan" M & P) sed aciem versus pallidioribus, subconfertis, angustis, tridymis, anguste adnexis.—Stipite ad apicem lamellis concolori, ceterum cupro-brunneo, ad basin nigrescente-castaneo, subglabro, ad basin leniter fibrilloso-subtomentoso,

aequali vel subaequali, 20–28 × 1.5–2 mm.—Contexto brassicae salatae odore gaudente, in stipite subtenaci.—Sporis 6.5–9.5 × 3.5–4.5 μ, oblongis vel fusiformibus, levibus, hyalinis, inamyloideis, saepe in situ germinantibus.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato; basidiis 23–26 × 6–7 μ, tetrasporis. Cystidiis et cheilocystidiis aequalibus, illis sparsis vel subsparsis et in regione aciei propinqua tantum visis, his numerosis, 20–25 × 7.5–13 μ, ventricosis vel frequentius vesiculosis et pedicellatis, interdum late clavatis, ad apicem late rotundatis.—Hyphis fibulatis, inamyloideis, in nulla parte gelatinosis.—Epicute pilei tenuissima ex hyphis filamentosis levibus efformata, interdum elementis hypodermii perforata; hypodermio subirregulari, ex hyphis forma et magnitudine variabilibus hyalinis sed pigmento resinaceo melleo-brunneolo granulatim incrustatis, structura sua Collybiam subhybridam in mentem revocante, haud stricte radiatim dispositis elementis consistente.—Ad lignum emortuum in silvis mixtis. Typus a R. Singer no. M 6777 in CHILE: Valdivia, Cordillera Pelada, Chivería, 7–V–1967 lectus et in SGO depositus est.

COLLYBIA FUEGIANA Sing., Sydowia 6: 186. 1952.

Description see there. Many additional collections were made:

Material studied: ARGENTINA: Tierra del Fuego: Rio Grande: Estancia Nueva Argentina, 10–II–1950, Singer M 157 (LIL), typus.—Neuquén: Lago Correntoso, on rotting wood of *Nothofagus dombeyi*, 16–IV–1965, Singer M 5016 (BAFC).—Rio Negro: Camino de Laguna Frías al Paso de las Nubes, a solitary growing lignicolous spring form, 19–XI–1964, Singer M 4047 (BAFC).—CHILE: Valdivia: Cordillera Pelada at 900–950 m alt., on wood of *Nothofagus nitida*, 9–V–1965, Singer M 5629 (BAFC).

Neoclitocybe

Neoclitocybe microspora Sing. spec. nov.—Pileo albido, interdum leniter flavescente vel centro pallide subfumoso, haud viscido, levi, margine initio subinvoluto, haud hygrophano, impolito, centro plerumque dehydratatione umbilicato et albo-fibrilloso-sericeo, ceterum glabro, haud pellucide striato, margine demum interdum lobulato, 16–33 mm lato.—Lamellis albis vel albidis, confertis vel rarius confertissimis, satis angustis, vel angustis, integris ad aciem, in siccis stramineo-flavidulis vel albidis, adnatis vel subdecurrentibus vel decurrentibus.—Stipite pallide sordide grisello vel cremeo-grisello, ad basin in siccis fulvescente apicem versus pallidore vel pallido, pruinoso vel glabriusculo, saepe subexcentrico, subaequali, 11–23 × 1.2–2 mm; mycelio basali byssiformi substratoque

appresso, albo.—Contexto albo, inodoro.—Sporis 2.2–4 × 1.6–2.5 μ, ellipsoideis, levibus, hyalinis, inamyloideis.—Hymenio e basidiis formato et cheilocystidiis marginato; basidiis 10.5–14 × 3–4 μ, tetrasporis, nonnumquam paucis bisporis intermixtis; cystidiis nullis, sed cheilocystidiis interdum ad aciem admodum sparsis vel numerosis et raro prope aciem quoque visis, basidiis intermixtis, versiformibus, subinconspicuis.—Hyphis hyalinis, fibuliferis, inamyloideis, haud gelatinosis; tramate hymenophorali regulari, in mediostrato cellulis exiguis augustis intertextis efformato, in strato laterali multiseptatis et usque ad 16 μ latis.—Epicute pilei hyphis repentibus hyalinis filamentosis breviter diverticulatis consistente, haud gelatinisata, tenui, diverticulis interdum sat distantibus.—Ad ligna. Typus (M 5738) in BAFC conservatur.

Material studied: CHILE: Valdivia: Cordillera Pelada, Chivería, 10–V–1965, Singer M 5738 (BAFC), typus.—Valparaiso: Viña del Mar, Parque Salitre, 16–VII–1966, leg. W. Lazo no. VI–9 (SGO).

NEOCLITOCYBE BYSSISEDA (Bres.) Sing., Sydowia 15 : 55. 1961.

Description see Lilloa 26: 120. 1953, and Revue de Mycol. 18: 7. 1953. Chilean material from Colchagua: Pumanque, 15–VIII–1966, leg. W. Lazo no. PU–21 (SGO).

Neoclitocybe aberrans Sing. spec. nov.—Pileo cinnamomeo, haud viscido, glabro, per medium radium pellucide striato, concavo, ± 6 mm lato.—Lamellis sordide cremeis, distantibus, angustis, profunde decurrentibus, descendentibus, haud anastomosantibus.—Stipite coriicolori-pallido, pruinoso, centrali, aequali, ± 11 × 1 mm, mycelio basali membrana substrato appressa byssoidea tantum consistente, albo.—Contexto albido, inodoro.—Sporis 4.5–5.5–(6) × 3.8–4 μ, facile collabentibus, breviter ellipsoideis vel interdum subglobosis, hyalinis, levibus, inamyloideis.—Hymenio e basidiis efformato, cheilocystidiis admodum sparsis, dermatocystidiis simillimis, inconspicuis; basidiis 20–25 × 5.5–6.5 μ (1)-(2)-(3)-4-sporis, clavatis.—Hyphis fibulatis, inamyloideis, haud gelatinosis, in tramate hymenophorali regulari hyalinis, plerumque filamentosis et usque ad 13 μ latis.—Epicute pilei e hypharum terminationibus intertextis consistente quae frequentius excrescentias vel tumescentias mucronatas exhibunt vel dermatocystidia repraesentant; dermatocystidiis exiguis, ampullaceis vel subcylindraceis, ad basin interdum incrassatam usque ad 13 μ et mucrone e.gr. 5 × 1.5 μ.—Ad humum lignosum (in quisquiliis lignosis terra humoque intermixtis) in silvis Eucryphiis dominatis solitario, autumno. Typus a R. Singer no. M 5731 in CHILE: Valdivia, Cordillera Pelada, in pendiente occidentali, 420 m alt. 7–V–1967 lectus et in SGO conservatus est.

This species has somewhat the appearance of *Omphalina pyxidata*. It is rare.

Marasmiellus

MARASMIELLUS ALLIIODORUS (Bertero ex Mont.) Sing., Sydowia 9: 381, 1955 ex Sing., Ark. f. Bot. 4: 382. 1959.

Description with synonymy see Ark. f. Bot. l.c., where we have also described four forms: f. *parasiticus* (parasitic on *Drimys*); f. *minor*, more pigmented, and although as small as the preceding, not parasitic; f. *coloratus*, as large as f. *alliiodorus* but pigmented; saprophytic and mostly on small twigs; f. *alliiodorus* the type form, typical: pallid, medium sized.

Material studied: Aside from the material studied earlier (from Juan Fernandez Islands, Chile, leg. Skottsberg and Sparre) we have also abundant material from continental Chile, from Llanquihue and Valdivia to Central Chile and even at Fray Jorge, relict forest in the province of Coquimbo.

This common and well defined species has, thus far, not been found in Argentina. It is commonest in the anectotrophic forests with *Drimys* and/or *Aextoxicum*. The carpophores as well as the mycelium have a strong smell of garlic (which, in our region, they have in common only with *Marasmius aporpohyphes)*, so that it is often smelled before it is seen. No wonder, then, that is has called the attention of Bertero (1830!), Philippi (commenting on this common fungus in Fray Jorge), and others.

MARASMIELLUS NIGRIPES (Schwein.) Sing., Pap. Mich. Acad. Sc. Arts & Lett. 32: 130. 1948.

As for synonyms see Singer, l.c. and Lilloa 25: 481, 1952. For a full description, see Singer & Digilio, Lilloa 25: 156, 1952. The Chilean material was found at Hueycolla, prov. Valdivia, on dead wood of *Aextoxicum*, 4–V–1967, Singer M. 6726 (SGO) and Pilmayquen, provincia Osorno, on dead leaf of Gramineae sp., 13–V–1967, Singer M 6865 (SGO).

Marasmiellus antarcticus Sing. spec. nov.—Pileo albo, vel cinnamomeo (plerumque clare carneo-cinnamomeo in centro, albo in margine), glabro, haud viscido, levi, demum breviter pellucide striato et sulculato, convexo dein applanato, primum interdum umbonato, sed plerumque obtuso, generatim circulari integroque sed raro subelliptico et interdum demum lobulato-crenato, 3–10 mm lato.—Lamellis albis, angustis vel moderate latis, confertis vel subdistantibus, ad aciem inegris et concoloribus, adnatis, frequenter adnexis, raro subrotundatis, tridymis.—Stipite ad api-

cem albo vel pallido, ad basin cinnamomeo, dein maxime e parte (apice excepto) pallide cinnamomeo vel ochraceo-brunneo et ad basin atrocinnamomeo vel castaneo, demum interdum toto castaneo, pruinato-subflocculoso praesertim ad basin, ad apicem frequenter glabrescente, aequali, rarius basin versus attenuato, centrali, rarius leniter excentrico vel excentrico, frequenter curvato, 7–15 × 0.2–1 mm, insiticio.—Contexto tenui, in pileo albo, inodoro.—Sporis 7–9.5 × 2–2.8 μ, plerumque ± 8 × 2.5 μ, cylindraceis vel oblongis, levibus, hyalinis, inamyloideis.—Hymenio e basidiis consistente, cheilocystidiis marginato. Basidiis 18–25 × 5.2–6.5 μ, tetrasporis, basi fibulatis. Cystidiis nullis, sed cheilocystidiis 20–32 × 6.5–17 μ, late clavatis vel subvesiculosis vel vesiculosis, apice undulatis vel plerumque appidiculatis setulis paucis (usque ad quinque apicales) 2–7 μ longis.—Hyphis haud gelatinisatis, hyalinis, tenuitunicatis, fibulatis, inamyloideis.—Epicute pilei ex hyphis intertextis coralloideis et diverticulatis, pigmento membranali et paullum incrustante melleis, nonnullis rugulosis vel levibus.—Tegumento stipitis e cellulis criniformibus constante in parte superiore stipitis sparsis et exiguis, in parte inferiore numerosis, parte ventricoso usque ad 20 × 10–11.5 μ, frequenter usque ad 20 μ pedicellatis, uno vel rarius compluribus appendicibus digitiformibus 9–12 × 2.5 μ obsitis, membrana tenui vel vix incrassata instructis.—Ad ramulos delapsos et folia emortua Nothofagi obliquae et Aextoxici punctatae gregatim nec caespitose, autumno. Typus (M 6860) in SGO conservatur.

Material studied: CHILE: Osorno: Pilmayquen, 13–V–1967, Singer M 6860 (SGO), typus.—M 6874 (SGO), paratypus.—M 6873 (SGO), paratypus.—Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6513 (SGO).

This may easily be the same as *Marasmius antarcticus* Speg. which was found at Port Cook, Staten Island on *Nothofagus betuloides*, but since there is no material conserved, I did not wish to propose a transfer. *M. antarcticus* is characterized by its narrow spores. It is close to certain forms of *M. ramealis*.

Marasmiellus ramealis (Bull. ex Fr.) Sing. var. **multifolius** Sing. var. nov.—Pileo Marasmielli ramealis typico, usque ad 17 mm lato, convexo, centro anguste depresso, margine sulcato.—Lamellis albis, confertis, adnatis, nonnullis adnatosubdecurrentibus, haud anastomosantibus, moderate latis.—Stipite castaneo, ad apicem albo, aequali, insiticio, ± 13 × 1 mm.—Odore nullo.—Sporis 7.5–10 × 2.5–3 μ, oblongis; basidiis 20 × 6 μ, tetrasporis; cheilocystidiis ad et prope aciem lamellarum late clavatis vel vesiculosis, corpore fundamentali hyalino vel pallide stramineo in KOH, 16–21 × 13–14 μ, setulis apicalibus 2–20 × 1.3–2 μ.—In epicute lenissime pigmento stramineo incrustatulis hyphis intertextis diverticulatis

diverticulis obtusis (usque 10 × 3 μ), haud gelatinosis, nec hyphis aliarum partium carpophori gelatinisatis, fibulis numerosis (sed septis secundariis etiam praesentibus), membranis omnibus inamyloideis.—Ad lignum dicotyledoneum in silva. Typus a Martha Singer et P. Hernandez in Chile: Chiloe: Pudeto, Maio 1967 lectus et sub numero Singer M 6793 in SGO depositus est.—A *M. antarctico* sporis paullum minus elongatis sed praecipue pileo maiore et parietibus crinum stipitis incrassatis (1–2 μ) differt. A *Marasmiello rameali* var. *rameali* differt lamellis confertis. Delimitatio inter M 6793 (hic) et *Marasmium bonaerensem* Spegazzinii, An. Mus. Nac. Bs. As. 6: 110. 1899 (cp. Singer in Lilloa 25: 483, 1952) difficilis est et hic a var. *multifolio* inseparabilis sit.

Marasmiellus ramealis (Bull. ex Fr.) Sing. var. **foliicola** Sing. var. nov.—Pileo colore var. ramealis vel pallidore (gilvo, ad marginem gilvo-albido), forma aliisque notis etiam illam revocante.—Lamellis alutaceo-albidis, vel albidis, subdistantibus vel distantibus, mediocriter latis, adnatis vel adnexis vel rotundato-adnatis, haud anastomosantibus.—Stipite brunneo vel castaneo, plerumque gradatim pallidiore apicem versus, villoso-asperulo, insiticio, ± 13 × 0.2–0.8 mm.—Contexto inodoroo.—Sporis 6–9.3 × 2–3.5 μ, oblongis, inamyloideis. Basidiis 18–20 × 4.5–4.8 μ tetrasporis, basidiolis fusoideo-ampullaceis. Cystidiis nullis; cheilocystidiis in corpore basali vesiculosis vel ventricoso-vesiculosis 14–40 × 9–19 μ, setulis apicalibus divergentibus 2–7 μ longis, pedicello brevi vel longo instructis, hyalinis, numerosissimis.—Epicute hyphis structura sectionis Ramealium typica gaudente, pigmenti incrustationibus nullis vel subnullis atris sed lenibus tenuibus submelleostramineis praesentibus, hyphis inamyloideis, fibulatis, nulla in parte gelatinosis.—Ad folia dejecta sicca in silva anectotrophica, gregatim, Maio usque ad Novembrem. Typus a G. Franz in Chile: Coquimbo: Fray Jorge, 10–XI–1967 ad folia Aextoxici punctatae lectus et a R. Singer sub num. M 7827 in SGO depositus est.—Etiam a W. Lazo in Colchagua: Pumanque 29–V–1967 in foliis arborum caducifoliarum lectus et a R. Singer sub num. Lazo Pu-48 in SGO depositus est.—A var. *rameali* differt pileo saepe minore (± 9 mm lato) et praecipue habitatione in foliis delapsis nec non pilis stipitis magis elongatis, filiformibus, brunneo-melleis, paucis partim hyalinis, nonnullis apicem versus furcatis, inamyloideis, apicem versus attenuatis, membrana crassa levi instructis, obtusis. Fortiter rassam chilensem silvarum centralium et septentrionalium sistit.

Marasmiellus sotae Sing. spec. nov.—Pileo fusco ("coffee" M & P), glabro, opaco, levi, centro depresso plano et margine convexo, vel convexo et umbilicato, haud viscido, 3–4 mm lato.—Lamellis albidis, haud

ventricosis, mediocriter latis, distantibus, liberis, subcollariatis.—Stipite violaceobrunneo ("auburn" M & P), mox obscuriore, subtiliter ex toto pubescente, insiticio, filiformi, 27 × 0.2 mm.—Contexto inodoro.—Sporis 6.5–9.5 × 3.5–4.5 μ, plerumque ± 8×4 μ, oblongis vel cylindraceis, levibus, hyalinis, inamyloideis.—Hymenio e basidiis efformato et cheilocystidiis marginato; basidiis 19–23 × 5.5–6.5 μ, tetrasporis. Cystidiis nullis; cheilocystidiis nodosis, diverticulatis aut ramulosis, versiformibus.—Hyphis fibulatis, inamyloideis, ut in pileo ita in stipite, haud gelatinosis.—Epicute pilei nodoso-coralloidea; hypodermio ex hyphis applicatis vel subintertextis pigmento incrustante pallide melleo vel intense brunneo provisis efformato.—Tegumento stipitis supra hyphas parallelas castaneo-brunneas corticis piloso, crinibus unicellularibus numerosis erectis 22–94 μ longis, e basi 5–9 μ lata ad apicem ± 3 μ latum gradatim paullumque attenuatis, crasse (1–2 μ) tunicatis, in KOH hyalinis, pseudoamyloideis.—Ad culmos Chusqueae in silva mixta. Typus a R. Singer cum Dr. E. R. de la Sota in CHILE: Llanquihue: Peulla lectus et sub num. M. 1882 in BAFC depositus est.

The only other collection with pseudoamyloid hairs on the stipe is Singer M 2012 from Chile; Llanquihue, Peulla, 22–III–1959, collected nearby but with umbonate pileus. Here the hairs are almost solid in places and up to 200 μ long, less pseudoamyloid and partly doubtfully pseudoamyloid. Since this specimen is in rather poor condition, it has not been studied further nor has it been recollected, but it is possible that it is the same as *Marasmiellus mariluanensis* (Speg.) Sing., see below.

MARASMIELLUS RUGULOSUS (Berk. & Curt.) Sing., Pap. Michigan Acad. Sc., Arts & Lett. 32; 130. 1948, sensu Singer.

Marasmius rugulosus Berk. & Curt., Journ. Linn. Soc. 10: 294. 1868.

The way we interpret the type (see Singer & Digilio Lilloa 22: 159. 1952), from which spores have not been recovered, it is not identical with the much smaller-spored *M. subcoracinus*, but identical with the material described by Singer & Digilio l.c. In the south, we have had one collection from near Concepción, Chile, which can hardly be separated from the Iguazú material described by us, but for the slightly larger carpophores which might suggest the existence of a Chilean race of this species. Since *M. rugulosus* has been collected but rarely, we merely add a detailed description of the Concepción material:

Pileus young "Rembrandt" to "Hindu" M & P (a very deep chestnut), the center remaining so, the marginal portion soon becoming much lighter colored, a grayish reddish brown like "French beige" or "Pecan br." M & P, rugulose-sulculate to rugose in the marginal third when mature, otherwise smooth but in age often cracking rimosely (but not radially),

glabrous, convex and sometimes vaguely subumbonate, but obtuse, many caps becoming shallowly to rather deeply depressed in the center, 14–33 mm broad.—Lamellae buff-pallid from the beginning, tridymous, with entire edge, subclose, broad, not intervenose or with slightly rugulose ground, adnate; spore print white when fresh.—Stipe buffish at apex, blackish chestnut below, at apex or in apical half pruinate in youth, but glabrescent, in lower part glabrous, or subglabrous, tapering downwards, insititious or subinsititious, 10–43 × 1.5–4 mm.—Context inodorous.

Spores (6)–6.5–10 × (3.2)–3.5–5 μ, ellipsoid, smooth, hyaline, but becoming brownish in contact with the pigment of the epicutis of the pileus, inamyloid.—Hymenium: Basidia 33–40–(50) × 6.5–8.5 μ, relatively long, 4-spored; basidioles fusoid to mostly ampullaceous. Cystidia, none; cheilocystidia none seen.—Hyphae with clamp connections, inamyloid, nowhere gelatinized; hymenophoral trama hyaline, thin-walled or (few) thick-walled hyphae running axially.—Cuticular layer of the pileus consisting of exceedingly irregular elements which are sometimes broadly clavate and erect (dermatocystidioid), e.gr. 22 × 12 μ, interlaced and dense, many with hyphal ends which may be appendiculate with horn-like sterigmatoid appendages or diverticula, incrusted by a distinct brown incrusting pigment.—Hairs of the stipe surface mostly short ventricose or subvesiculose, 10–25 × 10–25 μ, some ampullaceous or ventricose-elongated e.gr. 50 × 10–12 μ, with the apex about 4.5 μ broad and obtuse, wall thin to moderately thick (up to 1 μ), hyaline, in fewer cells pale ochraceous.

On the trunk of a dicotyledonous tree, densely gregarious, late spring. CHILE: Concepción: Boca del Bio-Bio, 11–XI–1967, Singer M 7815 (SGO).

Marasmiellus peullensis Sing. spec. nov.—Pileo brunneo vel griseofusco ("kis kilim", "oak", rarius "chukker br"), margine concolori vel pallidiore, breviter vel per medium radium sulculato vel sulcato, glabro, haud viscido, convexo, centro interdum applanato vel subdepressulo, sed plerumque umbonato, ut minime in siccis umbonato, rarius campanulato obtusoque, sub lente interdum subtiliter subtomentosulo, opaco, 5–7.5 mm lato.—Lamellis sordide cremeis vel pallidissime brunnelolis vel avellaneis (e.gr. "Aztec" + "butterscotch" M & P), subangustis, ad aciem integris, subdistantibus vel distantibus (e.gr. 9 lamellis integris cum nonnullis lamellulis), ad aciem interdum pallidioribus, anguste adnexis interdum remotis.—Stipite ad basin brunneo, interdum atrocastaneo, ad apicem pallidiore, ex integro hirsuto vel vellereo-piloso e crinibus subhyalinis vel pallidis, aequalí vel basin versus gradatim incrassato, insiticio, 15—21 × 0.4–1 mm (ad apicem 0.2–0.9 mm).—Contexto inodoro, tenacello.—Sporis 6–10 × 3.2–5 μ, plerumque 8 × 4 μ, ellipsoideis vel oblongis,

hyalinis, levibus, guttulatis, inamyloideis.—Hymenio e basidiis efformatis et cheilocystidiis paucis vel numerosis marginato; basidiis tetrasporis. Cystidiis nullis; cheilocystidiis 22–33 × 7.5–7.8 μ et integris, permultis fortiter diverticulatis aut in apice tantum setulosis, frequenter ramosis, simplicibus inter ea plerumque subcylindraceis, hyalinis, tenuitunicatis vel subtenuitunicatis.—Hyphis fibulatis, haud gelatinosis, inamyloideis, nec in stipite pseudoamyloideis; tramate hymenophorali subregulari.—Epicute pilei brunneolo vel hyalino, Ramealium modo diverticulato-coralloideis hyphis irregulariter intertextis vel in fasciculis hypharum intertextarum vel subintertextarum subascendentibus efformata, interdum intermittente ita ut hypodermium ad superficiem ascendit; hypodermio ex hyphis radialibus prostratis et pigmento incrustante tenui vel crasso ochraceobrunneo vel atrocastaneo manifeste ornatis sed nonnullis hyphis pigmento incrustante paene destitutis, membranis tenuibus vel, ut minime in adultis crassiuculis et pallide brunneolis vel melleo-hyalinis, hyphis ± 6 μ latis.—Tegumento stipitis pilis longis crasse tunicatis, filamentosis, inamyloideis efformato, pilis Crinipellem in mentem revocantibus, 50–150 × 6–9 μ, apice obtusis, membrana 1.5–3 μ diam.—Ad lignum emortuum arborum et arbustorum Dicotyledonum in silva, autumno. Typus (M 1924 a) in BAFC conservatur.

Material studied: CHILE: Llanquihue: Peulla, 20–III–1959, Singer M 1924 a (BAFC), typus.—22–III–1959, M 2013 (BAFC).—Valdivia: West slope of Cordillera Pelada at 420 m alt., 4–V–1967, Singer M 6701 (SGO).

Marasmiellus mariluanensis (Speg.) Sing. comb. nov.

Mycena mariluanensis Speg., Bol. Acad. Cienc. Córdoba 25: 6. 1921.

Original description see Spegazzini, Mycetes Chilensis, l.c. The type (LPS) shows clearly that this is a *Marasmiellus*: Spores 9.7 × 4.8 μ cylindrical-oblong, hyaline, smooth, inamyloid; basidia 25 × 7 μ; cystidia none. Hymenophoral trama with thin cylindrical hyphae, with clamp connections, inamyloid.—The material is strongly infested by mould, not in very good condition. Are the cheilocystidia really as described by Speggazini, viz. "40–45 μ long, almost cylindric in the lower two thirds, and eggshaped or glanduliform (15 × 10 μ) in the upper third" ? The spores according to Spegazzini are 10–12 × 6–7 μ,—also a distinctive character—if correctly observed. This was collected the 18th of May 1918 near Victoria, Malleco, Chile, on dead branches. Material studied: The type.

Unfortunately, we were not able to determine what type of stipe hairs are present, and what exactly is the structure of the covering layer of the pileus. The latter seemed to have a Rameales-type epicutis, but is rather badly destroyed.

Marasmiellus papillifer Sing. spec. nov.—Pileo fusco vel brunneo ("English oak" vel "spice" M & P) in centro, ad marginem pallidiorem sulcato, glabro, neque hygrophano neque viscido, convexo, centro leniter depresso et in depressione papillato, 2–7 mm lato.—Lamellis cremeo-grisello-pallidis, pallidissime sordide alutaceis, 14–16 lamellis integris, 3–5 lamellulis, satis angustis, distantibus vel subdistantibus, adnatis.—Stipite castaneo vel fusco, primum pallidiore vel pallido ad apicem, ex integro piloso e crinibus hyalinis, aequali, insiticio, 40 × 1 mm.—Contexto inodoro vel subinodoro.—Sporis 7–9 × 3.5–4.8 μ, ellipsoideis vel oblongis, levibus, hyalinis, inamyloideis.—Hymenio e basidiis efformatis et cheilocystidiis marginato; basidiis 25–31 × 6.2–7 μ, tetrasporis, basidiolis fusoideis; cystidiis nullis.—Hyphis in hymenophoro et in interiore stipitis inamyloideis, fibuligeris, haud gelatinisatis.—Epicute pilei densiuscule intertextis hyphis fortiter diverticulatis (diverticulis irregulariter distributis, obtusis), in toto strato cuticulari membrana tenui sed firma aut crassiuscula pigmento membranali pallide melleo vel ochraceo colorata sed haud vel vix pigmento incrustato (vel incrustatione pallidissima tenuissima).—Tegumento stipitis e pilis erectis 25–140 (160) × 4–5.5 μ efformato, piliis aequalibus vel leniter apicem versus attenuatis (frequenter usque ad 3 μ diam.), inamyloideis, levibus, hyalinis, crasse (1–2 μ) tunicatis usque ad apicem obtusum. Sub tegumento strato hypharum pigmentatarum (brunnearum) parallelarum, quae iodi ope rubidocastaneae evadunt sed vix rite pseudoamyloideae sunt, hyphis illis etiam pigmento incrustante destitutis.—Ad folia dejecta *Nothofagi nitidae* nec non ad ramulos exiguos eiusdem, autumno. Typus (M 6801) a R. Singer in CHILE: Llanquihue: 15 km NE a Puerto Pargua, 9–V–1967 lectus et in SGO conservatus est.

Marasmiellus omphalophorus Sing. spec. nov.—Pileo cinnamomeo, vel ochraceo-brunneo 12/13–F–8 ("Sudan br." in centro), in juvenilibus atrorubrobrunneo vel atrocastaneo (prope "Montella" M & P), saepe leniter rugoso-striato, per quartam vel tertiam partem radii sulculato, glabro, convexo, dein subapplanato in nonnullis, semper manifeste et sat profunde umbilicato, 5–19 mm lato.—Lamellis pallide cinnamomeis vel pallidis, ad aciem plerumque grisascentibus, moderatim latis, distantibus, rotundato-adnexis sed interdum ad apicem stipitis dilatatum adnatis.—Stipite atrocastaneo, subcastaneo-fuliginoso, in juvenilibus ad apicem pallidiore vel pallido, ipsa basi demum nigra, aequaliter pubescente, aequali vel subaequali, insiticio, 20–43 × 0.3–2 mm.—Contexto in pileo stipiteque exsiccati (cortice excepta) albo vel albido, odore leniter brassicae olerariae salatae.—Sporis 7.5–8.5 × 2.2–3.5 μ, subfusoideis vel fusoideo-ellipsoideis, levibus, hyalinis, inamyloideis.—Hymenio: Basidiis 18–25 × 5–7 μ, tetrasporis, nonnullis membrana subgelatinascente visis;

basidiolis fusoideis. Cheilocystidiis raris, sparsis hyalinis, versiformibus, appendicibus digitiformibus gaudentibus. Cystidiis nullis.—Hyphis fibuliferis, in tramate pilei et hymenophorali hyalinis, in cortice stipitis brunneo-incrustatis, inamyloideis, nonnullis membrana crassiuscula, strato externo leniter gelatinascente, sed nulla in parte stratum gelatinosum efformantibus, membrana usque ad 2 μ crassa sed saepe tenui.—Epicute pilei cutem sistente sed elementis admodum irregularibus, haud parallelis, diverticulis irregulariter dispositis et per areas intermittentibus, sed in sectionibus bonis semper demonstrabilibus, interdum dermatocystidiis typi cheilocystidiorum etiam praesentibus; pigmento in epicute et hypodermio melleo-pallido vel melleo-brunneolo, membranali, sed haud vel vix incrustante aut inctrustationibus subhyalinis vel pallidissime melleis.—Tegumento stipitis e pilis typi Crinipellis consistente, hislongis 17–120 μ, filamentosis, crasse tunicatis (2.5 μ), plerumque ad apicem leniter attenuatis, ad basin 4.5–7 μ latis, ad apicem 3–3.5 μ latis, obtusis, interdum solidis, haud pseudoamyloideis.—Ad stipulas et petiolas Asarae et Laureliae in silva, autumno. Typus (M 1897) in SGO conservatur.

Material studied: CHILE: Llanquihue: Peulla, 20–III–1959, Singer M 1897 (SGO), typus.—M 1898 (BAFC), paratypus.

Marasmiellus chilensis (Speg.) Sing. comb. nov.

Marasmius eburneus var. *chilensis* Speg., Rev. Chil. Hist. Nat. 29: 58. 1925.

Description see Spegazzini, l.c.

Material studied: CHILE: Concepción: Near Concepción, Espinosa no. 3 (LPS), typus. This was collected on dead leaves of *Persea lingue*.

In Spegazzini's fungus, the pileus is said to be only 2–3 mm broad, flesh white, as are the distant lamellae which are subcollariately attached to the apex of the stipe which is umber-bister. The spores are said to be 5–6 × 2–2.5 μ, but in the type specimen they were found to be 6.8–9.5 × 3.8–4.8 μ. These specimens have a distinct Rameales structure in the epicutis of the pileus. If the spores were actually as small as indicated by Spegazzini, this might well be a variety of *M. eburneus*, but since they are not, we believe it to be autonomous. It is extremely close to *M. opacus* (Berk. Curt.) Sing. from the Southern States of North America from which is differs mainly by the colors indicated by Spegazzini, the smaller size of the pileus, and the slightly broader spores as seen by us.

Marasmiellus nothofagineus Sing., spec. nov.—Pileo carneo-cinnamomeo, cinnamomeo, ochraceo-brunneo (12–C–9, 14–F–7/11), glabro vel in centro leniter tomentosulo sub lente, ad marginem pallidiorem (interdum subpallido inter strias) striato vel sulcato in adultis sed in junioribus et interdum in siccis levi, convexo, dein applanato, interdum umbonato aut in

umbone leniter et haut profunde umbilicato, interdum convexo et centro depresso, 2–7 mm lato.—Lamellis albis vel pallidis, demum alutaceo-cremeis, subdistantibus vel distantibus, interdum leniter venoso-connexis, adnatis vel adnato-subdecurrentibus, rarius adnexis.—Stipite castaneo vel fuligineo-castaneo, manifeste pubescente e pilis brunneolo-melleis, demum scabro-fibrilloso vel subglabrescente, insiticio, aequali, rarius leniter basin versus attenuato, 9–19 × 0.5–1 mm.—Contexto tenuissimo, in stipite concolori sed in pileo albo vel albido, inodoro.—Sporis 7.8–9.5 × 3–4.8 μ, paullum plus minusve bis longioribus quam crassis, levibus, hyalinis, inamyloideis.—Hymenio: Basidiis 20–27 × 7.5–10 μ, tetrasporis; cystidiis nullis.—Hyphis fibulatis, inamyloideis, haud gelatinosis. —Epicute pilei ab hypodermio paullum differentiata, ex hyphis intertextis repentibus, subradiatim dispositis, levibus vel rarissime excrescentiis paullum projicientibus obtusis vel acutis ornatis, sed structura Ramealium haud gaudentibus, hyalinis vel paullum pigmentatis; in hypodermio hyphis magis pigmentatis, parallelis vel subparallelis, cutem efformantibus, pallide ochraceis et incrustatione pallide ochraceo gaudentibus, 2.7–5.5 μ latis (in epicute 2.5–3 μ latis).—Tegumento stipitis supra hyphas parallelas corticis piloso, pilis 30–125 × 5.3–7.7–(10) μ (ad basin), × 3–6.5 μ (ad apicem), interdum ad basin incrassatis, plerumque apicem versus attenuatis, membrana melleo-brunneola, haud pseudoamyloidea instructis, levibus vel raro excrescentiis nodiformibus sparsis lateralibus provisis, membrana 1.2–2.4 μ crassa, raro tenuiore, in pilis brevioribus interdum incrustata, apice rotundato, in pilis longioribus interdum septis secundariis observatis. In una collectione apices pilorum tenui-tunicati et interdum pigmento obscuro obsiti sunt, in superficie interna parietis.—Ad folia delapsa emortua *Nothofagi dombeyi, N. nitidae,* rarius Eucryphiae et Lomatiae et Myrceugenellae, autumno. – Typus (Gamundí 328) in BAFC et LIL depositus est.

Material studied: ARGENTINA: Neuquén: Lago Correntoso, leg. C. Pujals & I. Gamundí, Gamundí 328, 30–IV–1958 (BAFC, LIL), typus. —16–IV–1965, Singer M 5007 (BAFC).—Villa Angostura, 22–IV–1965, Singer M 5201 (BAFC).—Quetrihué, 21–IV–1965, Singer M 5124 (BAFC). —Rio Negro: Laguna Frías, 21–III–1963, Singer M 3095 (BAFC).— CHILE: Llanquihue: Peulla, 22–III–1959, Singer M 2007 (BAFC).

Marasmiellus stypticoides (Speg.) Sing. comb. nov.

Panus stypticoides Speg., Bol. Acad. Nac. Cienc. Cord. 25: (13). 1921.

Pileus white, not shiny, smooth, glabrous, orbicular, later conchate, 6–15 mm broad.—Lamellae white, on drying becoming cream colored, rather narrow, close, acutely attingent at stipe or concurrent to a rudimentary stipe.—Stipe white, finely pubescent-fibrillose, often rudimentary,

at first eccentric, later almost rudimentary, vertical or oblique, short, up to 2 × 1 mm, insiticious or subinsiticious.—Context white, rather fleshy and not very thin (relatively) in pileus, unchanging, inodorous, toughish.

Spores 6.5–8.2 × 6.2–7.2 μ, globose or subglobose, rarely slightly rounded-angular, with thin eventually somewhat thickened wall, hyaline, with round central oil drop, inamyloid, smooth.—Hymenium consisting of basidia and bordered by cheilocystidia; basidia 34–50 × 8–9.3 μ, i.e. some rather long because of omission of the basal septum, 4-spored, according to Spegazzini also mixed 2- and 4-spored. Cystidia, none. Cheilocystidia making the gill edge broadly heteromorphic, filamentous, 0.5–3 μ broad, forking, hyaline.—Hyphae thin-walled, hyaline, inamyloid; hymenophoral trama regular, but its hyphae somewhat interwoven in the lateral stratum, at times or in places even strongly interwoven, more subparallel in the central strand (mediostratum), not distinctly gelatinized but not densely compacted.—Epicutis of the pileus of strongly interwoven hyphae or strands of hyphae, all hyaline and inamyloid, often with some superficial outgrowths which may even be globose, often forking, but not densely diverticulate or coralloid as in section Rameales.

On cortex and other woody fragments fallen to the ground in the woods. CHILE: Maule: "El Corte", 3–VIII–1967, Singer M 7211 (SGO). —Malleco (Mariluán): Victoria, collected 20–V–1918 (LPS), typus (poor).—The original description permits identification with our collection.

Marasmiellus gossypinulus (Speg.) Sing. Sydowia 15: 58. 1961.

Pleurotus gossypinulus Speg., Bol. Acad. Nac. Cienc. Cordoba 11: 9. 1887.

Pileus pure white to ocher white, or hyaline when wet and white when dry, becoming sordid when dried, one quarter to two thirds of margin becoming transparently striate and sulculate when mature, hygrophanous, very finely but sub lente strongly pubescent, glabrescent, convex or applanate with slightly elevated rear portion, conchate 4–15 × 3–10 mm.—Lamellae white to pale ocher, close or subclose, rather narrow, attenuate-concurrent to a lateral sterile spot or stipe rudiment which is inserted laterally often in the rear sinus of the pileus; spore print in fresh condition pure white.—Stipe merely a scarcely extended lateral sterile area of the pileus or at first strongly eccentric and never more then 1 mm long, not continuing growth and remaining hidden between the two rear lobes of the rear sinus of the pileus, mostly, if at all developed, remaining obliterated and functionless, white.—Context thin, white, inodorous.

Spores 6–8.3 × 3–5 μ, characteristically guttiform or mucronate below and broadly fusoid, attenuated towards the upper end or rounded, not

angular in polar view, sometimes subellipsoid, thin-walled, hyaline, inamyloid, smooth.—Hymenium consisting of basidia and some scattered cheilocystidia on edges; basidia 18–24 × 4.5–6.3 µ, 4-spored or mostly 4-spored. Cystidia none; cheilocystidia basidiomorphous, more rarely ampullaceous or subcapitate, often with an apical or lateral mucro or diverticulum, hyaline, inconspicuous.—Hyphae with clamp connections, not gelatinized anywhere, inamyloid and thinwalled everywhere; at times the clamps are missing in some parts of the carpophore e.gr. the epicutis, but the base of the basidia is clamped. Hymenophoral trama regular, consisting of generally filamentous elements which are interwoven and not gelatinized.—Epicutis of pileus at first of repent hyphae which are at places interlaced into irregular knots and show occasional bulges or diverticula, later developing a weak Rameales-structure with distant bulges and diverticula and ramifications, some of the excrescencies cystidioid and reminding one of the cheilocystidia.

On mosses and other epiphytes like lichens or Hymenophylla, or directly on the wood of *Nothofagus dombeyi* and *N. obliqua* (?)

Material studied: ARGENTINA: Rio Negro: Rio Frías, near Laguna Frías, 16–III–1959, Singer M 1844 (BAFC).—M 1830 (BAFC).—The type came from CHILE: Punta Arenas, July 1882, not conserved; again observed on Gable Island, Beagle Canal, May 1882.

MARASMIELLUS JUNIPERINUS Murrill, North Amer. Flora 9: 243. 1915.

Marasmius juniperinus (Murr.) Murr. Mycologia 7: 156. 1915.
Xerotus porteri Speg. Rev. Chil. Hist. Nat. 22: 32. 1918.

For a description of our southern material see Singer & Moser, Mycopath. & Mycol. Appl. 26: 153. 1965.

Material studied: ARGENTINA: Rio Negro: Arroyo Blest, 14–III–1959, Singer M 1776 (BAFC).—CHILE: Valdivia: Cordillera Pelada west slope at 580 m alt., 30–III–1963, Singer M 3252 (BAFC).

Dennis, who described this species from material collected near the type locality in the Blue Mountains, Jamaica, indicates subglobose spores 7 × 6.5 µ. This latter indication is either an error or corresponds to a species different from *M. juniperinus*, since my type studies revealed abundant spores which were 9.8–10.5 × 5–5.8 µ, oblong, smooth, hyaline, inamyloid, and the epicutis as described by us l.c.

Marasmiellus osornensis Sing. spec. nov.—Pileo cinnamomeo, levi sed ad marginem sulcato, glabro, convexo dein applanato, obtuso, circulari, demum saepe conchato, 7–9 mm lato.—Lamellis satis angustis, aciebus integris et interdum stramineo-decoloratis, subdistantibus, lamellulis nu-

merosis intermixtis, adnexo-subliberis vel adnexis.—Stipite cinnamomeo, primum subcentrali, dein fortiter excentrico vel sublaterali, 1–3 × 0.2–0.5 mm, insiticio, curvato.—Contexto tenuissimo, albo, inodoro.—Sporis 6–7 × 3–4 μ, hyalinis, ellipsoideis, interdum suboblongis, levibus, inamyloideis.—Hymenio: Basidiis clavatis; cystidiis nullis; cheilocystidiis demum zonam latam ad acies lamellarum occupantibus, admodum versiformibus et irregularibus, stramineis vel hyalinis, frequenter excrescentiis filamentosis tenuibus vel ramificationibus vel nodulis obtusis praevisis, demum haud hymeniformiter dispositis sed irregulariter subintertextis.—Hyphis fibulatis sed septis secundariis defibulatis numerosis, inamyloideis; tramate hymenophorali regulari, haud gelatinoso, hyphis tenui- sed firme tunicatis.—Epicute pilei tenui, hyalina, ex elementis irregularibus plus minusve diverticulato-coralloideis Ramealium modo; hypodermio cuten praesentante, ex hyphis subparallelis stramineis firme tunicatis 4–7 μ latis, haud gelatinisatis nec incrustatis efformato.—Ad ramos ligneos Dicotyledonum delapsos in silva *Nothofago dombeyi* dominata, gregatim, autumno. Typus (M 6846) a Singer in CHILE: Llanquihue, Volcán Osorno 2 km de Petrohué, 10–V–1967 lectus et in SGO conservatus est.—Hostis incertus sed probabiliter *Nothofagus* vel *Gevuina*.

MARASMIELLUS COULEU Sing., Sydowia 8: 118. 1954.

Description see there. In additional material we have encountered spores up to 8.3–(9) μ long, and the cheilocystidia often invading the sides of the lamellae as pleurocystidia. Always on *Chusquea*.

Material studied: ARGENTINA: Neuquén; Puerto Manzano, 18–V–1952 (LIL), typus.—CHILE: Valdivia: Hueycolla, 4–V–1967, Singer M 6711 (SGO).—Cuesta Sta. Elvira, 14–V–1967, Singer M 6904, 6904 a (SGO).

Micromphale

Micromphale austrochilense Sing. spec. nov.—Pileo colore Marasmielli ramealis gaudente vel centro obscuriore (e.gr. "Mohawk", "cocoa" M & P in centro et striis), inter strias pallidiore vel subpallido, pelludice striato, frequenter etiam fortiter vel leniter sulcato per dimidium radium, glabro, non vel vix viscido, convexo, umbonato aut obtuso aut umbilicato, umbone interdum papilliformi, in centro saepe dein applanato vel depresso, aut circum papillam applanato vel subdepresso, in juvenilibus plerumque umbonato vel papillato nec non in siccis, 3–22 mm lato.—Lamellis albis, sed frequenter ad latera avellanescentibus ("Suntan", "almond" M & P), subangustis vel plerumque sublatis vel latis ut minime in adultis, subconfertis vel distantibus, et tunc subventricosis, interdum

ventricosis, haud anastomosantibus, rotundato-adnatis vel rotundato adnexis aut adnexo-subliberis, in vetustis etiam interdum adnato-subdecurrentibus, didymis raro tridymis in adultis.—Stipite castaneo apice pallidiore, demum argillaceo ("clay" M&P), atrocastaneo basin versus, pruinato-subhirsuto vel subglabro (et tunc sub lente pruinato-pubescente), demum interdum lanoso-fibroso praesertim basin versus, insiticio, aequali vel apicem versus subattenuato, raro incrassato, 8–30 × 0.5–1.2 mm.—Contexto inodoro vel subinodoro (haud *M. foetentis!*).—Sporis (5.5)–6–9.5 × 3.3–5 μ, ellipsoideis vel fusoideo-oblongis, depressione suprahilari plerumque gaudentibus, hyalinis, levibus, inamyloideis.—Hymenio: Basidiis 17–28.5 × 5.5–8 μ, tetrasporis, raro (1)–4-sporis; basidiolis fusoideis. Cystidiis nullis; cheilocystidiis nullis vel in adultis 20–22 × (6)–11–12 μ, versiformibus, multis vesiculoso-pedicellatis, sed aliis irregularibus, curvatis vel furcatis, nodosis vel ramosis, nonnumquam hyphis 2 μ latis e tramate hymenophorali natis perforantibus et cheilocystidiis immixtis.—Hyphis fibuligeris, inamyloideis, densis, sed in carne pilei sub strato cuticulari laxis, gelatinosis, hyalinis, filamentosis, in zona 30 μ crassa supralamellari haud gelatinosis.—Epicute pilei ab hypodermio paullum differentiata, ex hyphis in parte superficiali levibus, tenui vel vix subcrasse tunicatis, radiatim dispositis, repentibus, rarissime distantissimeque excrescentiis obtusis praeditis, interdum ramificatis, structura Ramealium ex toto destitutis consistente, pigmento in KOH exiguo, sparse incrustationes pallide melleas formante.—Tegumento stipitis pilis 10–90 × 4–11 μ, membrana hyalina vel straminea levi inamyloidea 0.2–1.2 μ crassa instructis, cylindraceis vel cylindraceo-subventricosis, apice late rotundatis, haud incrustatis consistente; hyphis subjacentibus contexti stipitis parallelis, densis, crasse tunicatis, membrana cinnamomea vel vinaceo-brunneola (KOH) instructis, ex ea re ab eis pilei differentibus.—Ad culmos Chusqueae et ad lignum et folia Eucryphiae aliorumque arborum, saepe gregatim, autumno. Typus (M 6687) in SGO conservatur.

Material studied: CHILE: Llanquihue: Peulla, 22–III–1959, Singer M 2006 (BAFC).—M 1990.—20–III–1959, M 1893 (BAFC).—Valdivia: Cordillera Pelada, 420 m alt., west slope, 7–V–1965, Singer M 5575 (BAFC).—M 5497.—700 m alt., M 5585 (BAFC).—South of Mirador, 6–V–1967, 900 m alt., Singer M 6744 (SGO).—Hueycolla, 1–V–1967, Singer M 6687 (SGO), typus.

Campanella

Campanella peullensis Sing. spec. nov.—Pileo pallido, glabro, sulcato, subcirculari, 5–7 mm lato.—Hymenophoro e lamellis distantibus furcatis et venoso-ramificatis, 1 mm latis consistente, albo.—Stipite concolori,

laterali, aequali, 3–5 × 0.7 mm.—Sporis 9–11 × 6–7 μ, ellipsoideis, paucis elevatione umboniformi ad latus externum gaudentibus, hyalinis vel incrustatione tenuissima interdum brunnescentibus-melleis.—Hymenio: Basidiis 54–58 × 5.5–11 μ tetrasporis; cystidiis et metuloidibus nullis; cheilocystidiis ad et prope aciem 54–58 × 6.2–10.3 μ (ad capitulum), infra capitulum apicale 3.5–4 μ latis, ad basin 1.5–2 μ latis.—Ad Chusqueam in CHILE: Llanquihue: Peulla, 20–III–1959 (LIL), typus.

Campanella austrochilensis Sing. spec. nov.—Pileo albo, pustulato, convexo, superficie sterili adhaerente, usque ad 10 mm lato.—Hymenophoro reticulato, 2 vel 3 vel 4 lamellis integris anastomosantibus 2 mm latis et lamellarum connectionibus 0.5–1.1 mm latis reticulatim connexis, nonnullis subvenosis, nonnullis crispis, albis.—Stipite nullo, sed pseudostipite minusculo plerumque praesente.—Sporis 5.5–7.5 × 4.8–6.2 μ, levibus sed extensione umboniformi ad exterius latus prominente vel rotundato-triangularibus, hyalinis.—Hymenio: Basidiis 29–30–(31.5) × (7.5)–8–8.5 μ, tetrasporis; cystidiis haud metuloidiformibus, sat tenuitunicatis, 50–55 × 6.8–14 μ, ventricosis sed apice constrictis et capitatis (capitulo 6.8–14 μ lato, interdum parte ventricosa minore, interdum maiore), rarius nonnullis cystidiis submetuloideis et forma identica gaudentibus et tunc membrana usque ad 1.2 μ crassa instructis.—Epicute inter typum Ramealium et structuram dichophysoideam intermedia, fibulis praesentibus.—Ad radices Chusqueae. CHILE: Llanquihue: Peulla, 20–III–1959, Singer M 1948 (LIL), typus.

Campanella stipitata (Sing.) Sing. stat. nov. (= *C. Candida* var. *stipitata* Sing. Mycologia 47: 765. 1955).—Description see Singer, l.c.

CAMPANELLA DENDROPHORA Sing., Mycologia 47: 765. 1955.
Description see there.
Material studied: ARGENTINA: Neuquén: Puerto Manzano, 19–V–1952, Singer M 746 (LIL), typus.—Isla Victoria, 17–V–1952, Singer M 706 (LIL), paratypus.—Camino de los Cántaros, hacia Lago Ortiz Basualdo, 6–V–1961, leg. I. Gamundí (BAFC, 21231).—Rio Negro: camino al Paso de los Nubes, 19–IX–1965, Singer M 4049 (BAFC).—CHILE: Llanquihue: Peulla, 20–III–1959, Singer M 1922 (BAFC).—Near Peulla, 21–III–1959, Singer M 1972 (BAFC).—Valdivia: Fundo Universitario, 13–IX–1967, Singer M 7400 (SGO).

CAMPANELLA ALBA (Berk. & Curt). Sing., Lloydia 8: 191. 1945.
Description see Singer, l.c.
Material studied: CHILE: Valdivia: Hueycolla, 1–V–1967, Singer

M 6685 (SGO).—Chivería, 10–V–1965 (BAFC).—Colchagua: Pumanque, 29–V–1967, W. Lazo, PU-46 (SGO).—ARGENTINA: Misiones: Iguazú, Refugio El Yaguareté, 15–IV–1957 (LIL).—BRAZIL: Rio de Janeiro: Serra dos Orgãos, 24–X–1961 Singer B 4026 (LIL).—25–X–1961, B 4031 (LIL).—BOLIVIA: La Paz: Nor-Yungas: Charobamba, 30–I–1956, Singer B 696 (LIL).—PERU: Cuzco: Macchu Picchu, 2400 m alt. 20–V–1958 (LIL).—ECUADOR: near Quito, 31–I–1892, Lagerheim (FH).—CUBA: typus (FH, K).

Mniopetalum

Mniopetalum megalosporum Sing. spec. nov.—Carpophoro e membrana repanda vel haud profunde cupuliformi consistente, parte concava inferiore fertili, circumferentia orbiculari vel subirregulari, estipitato, albo, levi, glabro, 4–5 mm lato.—Sporis 8.5–10 × 4–5.5 μ, guttiformibus vel ellipsoideis, levibus, hyalinis, inamyloideis.—Hymenio e basidiis tantum efformato; basidiis 25–31 × 7–8 μ, tetrasporis, paucis bisporis. Cystidiis nullis.—Hyphis fibulatis, hyalinis, haud gelatinosis, inamyloideis.—Epicute vix differentiata sed hyphis generatim appressis certis in locis fortiter conglomeratis-intertextis, et hic cellulis nonnullis nodoso-ramificatis sed debiliter et sparse modificatis, plerumque levibus et integris; ad marginem carpophori inter zonam inferiorem fertilem et superiorem sterilem elementis nonnullis basidioliformibus sed sterilibus visis quorum magnitudo 27–30 × 5–6 μ, una paucisve, plerumque una excrescentia brevi vel longa munita sunt, vel circumferentia sinuosa vel apice bifurcato gaudent. Typus in Chile, Valdivia, Fundo Universitario, propre urbem Valdivia, ad muscos supra terram loco umbroso 13–IX–1967 (vernalis est !) a R. Singer M 7404 lectus et in SGO conservatus est. – *M. bryophilo* affinis sed sporis voluminosis pro ratione nec non superficie hymeniali levissima differt.

Panellus

PANELLUS LONGINQUUS (Berk.) Sing., Sydowia: 6: 209. 1952.
Agaricus longinquus Berk., in Hooker, Botany of the Antarctic Voy.... (Flora Antarctica) 1: 447. 1844.
Pleurotus longinquus (Berk., in Hooker) Sacc., Syll. Fung. 11 : 26. 1895.
Agaricus minusculus Speg., Bol. Acad. Nac. Cienc. Córdoba 11: 124. 1887.
Pleurotus minusculus (Speg.) Sacc. Syll. Fung. 9: 50. 1891.

Description see Singer & Digilio, Lilloa 25: 121. 1952 and Singer, Sydowia 6: 209, 1952. Illustration with the original description by Berkeley in Hooker.

Material studied : ARGENTINA : Neuquén : Quetrihué, 18–V–1952, Singer M 734 (LIL).—14–V–1952, M 563 (LIL).—Isla Victoria, 17–V–1952, Singer M 694 (LIL).—Los Cántaros, 10–XI–1966, Singer M 6050 (BAFC).—Rio Negro : Al este de Santa María, 19–IV–1965, Singer M 5072 (BAFC).—Puerto Blest, 23–III–1963, Singer M 3140 (BAFC).—CHILE: Hermite Island typus of *A. longinquus*.—Gable Island, typus of *A. minusculus*.—Llanquihue : Peulla, 20–III–1959, Singer M 1872 (BAFC).—Valdivia: Cordillera Pelada, near Mirador, 900 m alt., 9–V–1965, Singer M 5640 (BAFC).—M 5646 (BAFC).

Horak (1967) indicates the spores erroneously as inamyloid in the type of *A. minusculus*. Reid (1963) comments on the type of *Pleurotus tasmanicus* (Berk.) Sacc. which according to these data might be another synonym of *Panellus longinquus*.

Panellus nubigenus Sing. spec. nov. ssp. **nubigenus:** Pileo primum albido mox ut minime partim subbrunneo-fusco, demum aquose sat pallide brunneo vel ochraceo-brunneo in humidis, primum subpubescente et ex ea re albido, mox glabrescente et demum denudato, subcirculari et area exigua surpicieis sterilis substrato adhaerente, hac aut excentrica aut laterali aut (plerumque) centrali vel subcentrali, levi, haud hygrophano in juvenilibus, convexulo, 4–14 mm lato; mycelio basali primum albo et inconspicuo, dein nullo.—Lamellis pallidis vel brunneolo-pallidis, confertissimis vel subdistantibus, moderatim latis, ad discum levem applanatum minutum lateralem, excentricum aut subcentralem concurrentibus (in primordiis tantum ad rudimentum stipitis).—Stipite nullo; rudimento stipitis in primordiis manifesto, hemisphaerico-nodoso, dein gradatim obsoleto, numquam functionali.—Contexto albido vel pallide brunneo ; odore debili, lignatili vel pungente et ingrato.—Sporis 7.5–9 × 4–6 μ, ellipsoideis, hyalinis, subopacis, amyloideis.—Hymenio: e cystidiis et basidiis constituto; basidiis 28–30 × 7.3–8.7 μ, dimorphis, (1) tenuitunicatis, primariis, (2) firmius tunicatis, secundariis. Cystidiis ad aciem lamellarum nec non in parte infera (aciei propinqua) dimidia, sed in spatiis interlamellaribus absentibus, 42–56 × 8–8.5 μ, fusiformibus vel ventricosis, in apicem tenuiorem attenuatum subobtusum vel acutum effilatis, ad basin pedicellatis, membrana tenui vel subcrassiuscula (delimitatione interna plerumque haud manifesta et contentu apparenter subopaco), nonnumquam debiliter pseudoamyloideis, hyalinis sed frequenter incrustatione apicali amorpha obtectis.—Hyphis fibulatis, inamyloideis, in strato supero tramatis pilei (strato subhypodermiali) ± gelatinoso laxe dispositis, hyalinis, filamentosis, sed in parte maiore, infera, haud gelatinosa, variabilibus inter filamentosas et late subcellulares, pigmentatis, fuscidulis, et pigmento apparenter intercellulari laete ochraceo-brunneo solubili in KOH obsitis; tramate hy-

menophorali haud gelatinisato; subhymenio lato, hyphis irregularibus, membrana firma instructis, intertextis, hyalinis, vix gelatinoso; membranis hypharum zonarum densarum non gelatinosarum crassiusculis et usque ad 4.2 μ crassis, frequentius 2 μ crassis; in zonis plus minusve gelatinosis membranis tenuibus vel ut maxime firmis sed haud crassis.—Epicute pilei ex hyphis versiformibus minus crasse tunicatis vel firme tantum tunicatis constituta, sat crassa; hyphis hic plerumque filamentosis et superficiem versus manifeste diverticulatis vel nodulosis, fortiter ramosis, pigmento incrustante (intercellulari?) coloratis; hypodermio vix differentiato.—Ad culmos Chusquearum in zona nebularum montium gregatim apparet et gymnocarpice evolvit. Typus a Singer (B 3650) in Columbia: Boyacá: inter Ramiriquí et Rondón lectus et in BAFC conservatus est.—Panelli cystidioso affinis.

Ssp. australis Sing. ssp. nov.—Pileo ochraceo-brunneo, subhygrophano, dehydratatione pallid alutaceo, humido transparenter striato, circumferentia reniformi, glabro (vel glabrescente?), convexo 5–10 mm lato.—Lamellis albis dein pallidis, subconfertis vel subdistantibus, adnato-subdecurrentibus ad stipitem.—Stipite excentrico-sublaterali, pileo concolori, villoso-pubescente, ± 3 × 1 mm.—Contexto flexibili, inodoro.—Sporis 7–9.2–(10) × 4–4.5 μ, oblongo-subcylindraceis vel rarius ellipsoideis, levibus, hyalinis, amyloideis.—Basidiis 23–30 × 6–7.5 μ tetrasporis. Cystidiis 21–41 × 4–10.5 μ, fusoideis vel subulatis, subacutis vel acutissimis, interdum lenissime tenuissimeque incrustatis, hyalinis vel brunneolo-hyalinis, tenuitunicatis, in parte aciebus propinqua dimidia latitudinis lamellae sparsis, ad acies numerosissimis.—Hyphis fibulatis, inamyloideis, in tramate pilai differentiato stratum superius latius (± 160 μ) formantibus ubi tenuissimae, hyaline, tenui-tunicatae, perlaxe distributae gelatinosaeque sunt, sub strato gelatinoso stratum supralamellare, haud gelatinosum, in KOH clare fulvidulum formantibus, hic latioribus et frequenter crassioribus (usque ad 33 μ latis).—Epicute tenuiuscula, ex hyphis vix vel haud gelatinisatis, aequaliter tenuibus saepe irregulariter ramoso-condensatis et leniter sparseque vel irregulariter diverticulatis.—Ad culmos Chusqueae couleu in silva *Nothofagi dombeyi* pura. Typus subspecieis a R. Singer (M 3529) in ARGENTINA: Neuquén: Lago Correntoso, 25–IV–1964 lectus et in BAFC conservatus est.

Both ssp. *nubigenus* and ssp. *australis* are strictly related to *P. cystidiosus*, a species which we have collected in the preandine subtropical valleys of the Selva Tucumano-Boliviana (Aconquija Mts.) and the Bolivian Yungas. *P. cystidiosus* is still closer to ssp. *australis* than it is to ssp. *nubigenus* since it has the same very broad gelatinized layer in the bistratous trama of the pileus. *P. cystidiosus* differs from both subspecies of *P. nubi-*

genus in having a different type of cystidium (relatively more elongated, and 45–110 μ long, mostly rounded-obtuse above, only rarely subacute or acute, more clearly pseudocystidioid and often continued into vessels of the trama, not restricted to the outer frontal half of the lamellae along the edges), in deep cream to ochraceous (10/11–G–6, "burnous" M & P) lamellae which are crowded, in short sulculate to almost smooth margin, and in a sterile edge of the lamellae constisting of strongly ramose and diverticulate–almost astrostromelloid-dichophysoid-elements.

One may think that there is a chance that ssp. *australis* is merely a younger or retarded stage of the type form. This might be assumed on the basis of the fact that the epicuticular structure is, as in *Marasmiellus* generally, less like that of the section *Rameales* of *Marasmiellus* (less diverticulate) than the structure of the older specimens. Also, the gelantinizing of the hyphae may be at times found to be more active in younger specimens than in old ones, and the stipe is at times found to be functional in young material and free and functionless or completely reduced in older specimens where the contact with the substratum has been taken over by the margin or the surface of the pileus. Nevertheless, in the case of *P. nubigenus,* we have found no functional stipe even in primordial stages, and the geographical separation of the two type localities is such that we must rather think in terms of geographical races.

The clamp connections of *P. nubigenus* often appear in form of medallion clamps, as has also been observed in other species of *Panellus.*

Cyptotrama

Cyptotrama hygrocyboides Sing. spec. nov.—Pileo rubro ("Egyptian r" + "Chippendale" + 8-A-6 in juvenilibus, dein "buccaneer" vel "Indian r" in centro et "tile r" vel "Princeton o" ad marginem aut ex integro "blaze", interdum "cadmium y" interstrias, in siccis "Granada" margine "mascara"), in maturis usque ad dimidium radium pellucide striato, convexo, aut centro dein depresso vel umbilicato aut centro obtuse umbonato, margine demum applanato, 7–25 mm lato.—Lamellis cremeis (subpallidioribus quam "Leghorn" M & P), carnem pilei versus frequenter rubescente-rosaceis et siccis plerumque roseis, haud anastomosantibus, latis vel latiusculis, saepe ventricosis, tridymis, subdistantibus vel distantibus, adnatis, rarius sinuato-adnatis.—Stipite rubro-aurantiaco ("bittersweet o" vel "Princeton o" M & P), sicco purpureo-rubro ("India r" M & P), subtiliter pruinosulo vel subglabro, glabrescente, subaequali vel aequali, levi, cavo-subtubuloso, 20–125 × 1–3 mm; basi raro subbulbuloso in juventute et mycelio basali subtili fibrilloso, albo, fugaci ornato, demum

apparenter insiticio.—Contexto superficiebus concolori, odore nullo; sapore miti.—Sporis 9–13 × 4–6.7 μ, oblongo-fusoideis vel ellipsodeis, levibus, depressione suprahilar instructis, guttula globosa interna praeditis, inamyloideis.—Hymenio e basidiis et cystidiis composito. Basidiis 34–52 × 5.8–8.8 μ, tetrasporis et tuterdum bisporis intermixtis, sterigmatibus bispororum plerumque admodum elongatis; basidiolis fusoideis vel cylindraceo-subfilamentosis. Cystidiis in acie et ad latera lamellarum identicis, 62–176 × 10–24 μ, membrana tenui vel frequentius moderate incrassata (0.8–1 μ) instructis, cylindraceo-obtusis et in pedicellum attenuatis vel frequentius ventricosis, apice subattenuatis (6.5–23 μ diam.) semper rotundato-obtusis, raro sub apice subcapitato constrictis, apicaliter tenui-incrustatis substantia resinosa clare ochracea vel pallide mellea granulari vel membranali-fracta, caduca in KOH, corpusculis pallide melleis vel ochraceis vel hyalinis internis vermiformibus interdum instructis, ceterum hyalinis, fortiter supra basidia projicientibus (50–70 μ).—Hyphis defibulatis, inamyloideis, haud vel vix gelatinosis, pigmento in KOH haud visibili. Tramate hymenophorali bilaterali, mediostrato hyalino, ex hyphis pro ratione voluminosis, subintertextis vel intertextis, axialiter dispositis, membrana usque ad 0.3 μ crassa instructis efformato; strato laterali manifeste divergente, ex hyphis hyalinis, tenuibus, tenuissime tunicatis, laxe dispositis efformato.—Epicute pilei corticata, dermatocystidiis vel elementis cystidioideis hymeniformiter vel subhymeniformiter composita, his elementis uniformiter longitudine sua terminantibus nec dermatocystidiis elongatis projicientibusque Pseudohiatulae modo intermixtis, cystidiis hymenialibus brevioribus et magis variabilibus, subvesiculosis et pedicellatis, ventricosis et centro constrictis frequenter obviis, subtenuiter (0.3 μ) tunicatis, inamyloideis, interdum leniter subincrustatis ita ut cystidia hymenialia; hypodermio sublaxe hyphis repentibus constituto, sed vix manifeste gelatinoso.—Tegumento stipitis pruinoso e dermatocystidiis versiformibus 22–55 × 11–15 μ forma sua elementa epicutis pilei in mentem revocantibus efformato.—Ad ramos muscosos aut putrecentes nec non ad lignum putridissimum delapsum, sed facile separabiles et solitarii vel subsolitarii autumno et hieme fructificantes. Typus (M 6518) a R. Singer in CHILE: Coquimbo: Fray Jorge lectus et in SGO conservatus est.

Material studied: CHILE: Valparaiso: Quintero, relict forest under *Drimys, Aextoxicum,* Myrtaceae, 5–VI–1967, leg. C. Villagrán, det. Singer M 6940 (SGO).—27–VI–1967, leg. Singer M 7015 (SGO).—Coquimbo: Fray Jorge, 16–IV–1967. Singer M 6518 (SGO), typus.

This extraordinarily interesting and beautiful agaric may at first sight be taken for a *Hygrocybe,* hence the specific epithet. It is apparently restricted to the northern and central relict forests, and is closely related

to *C. platense* Sing. (see below) which does not occur in our region, but belongs to the tropical elements which descend with the marginal forests of the Rio de la Plata down to Punta Lara (Central Argentina).

Cyptotrama platense Sing. spec. nov.—Pileo obscure aurantiaco, in siccis cinnamomeo, glabro sed sub lente subtiliter pruinoso, levi, convexo, obtuso, 5–9 mm lato.—Lamellis albis, subdistantibus, adnatis vel demum adnato-subdecurrentibus, ab apice stipitis frequenter demum separantibus, haud anastomosantibus, angustis vel mediocriter latis.—Stipite albo sed sub lente minute aurantiaco-alutaceo-maculato, subtiliter tomentoso-pilosulo, ad basin rotundato, aequali vel subaequali, 15–25 × 1–1.5 mm; mycelio basali subnullo, sed basi stipitis subhirsuta.—Contexto albo, inodoro.—Sporis 6.5–7 × 5–6.5 μ, subglobosis vel interdum globosis, nonnullis magis elongatis (7.5–10 × 4.5–5.5 μ), membrana homogenea firmula levi inamyloidea instructis.—Hymenio e basidiis cystidiis duorum typorum constituto. Basidiis 20–29 × 7.2–8.5 μ, tetrasporis; basidiolis fusoideis, ad basin fibulatis. Cystidiis (1) tenuitunicatis, fusoideis vel ventricosis et capitatis vel subcapitatis, apice dilatatis vel attenuatis, hyalinis, obtusis raro subacutis, 37–75 × 6.5–8 μ, ex eis acie lamellarum sub lente subfimbriata,—(2) crasse tunicatis, clavatis, elementis epicuticularibus simillimis, membrana aurantiaco-rufa (1.5 μ crassa) vel pallide ochraceo-brunneola instructis, e.gr. 22–30 × 7.5–9 μ, sparsis.—Hyphis haud vel vix gelatinosis in tramate pilei, hylinis, fibulatis, inamyloideis. Tramate hymenophorali pro ratione crasso, 150 μ plus minusve in diam., hyalino, hyphis mediostrati axialiter dispositis sed intertextis vel subintertextis consistente, strato laterali hyphis divergentibus, laxe dispositis, subgelatinosis consistente.—Epicute pilei e palisada subhymeniformi, in partibus hymeniformi corticata, elementis terminalibus ascendentibus vel erectis aurantiaco-rufescentibus vel pallide ochraceo-brunneolis, saepe cystidiis hymenialibus simillimis, resinaceo-incrustatis vel haud incrustatis, 25–40 × 5.5–6.5 μ, rarius magis voluminosis, membrana 1.5–2 μ crassa praeditis, plerumque clavatis, ad apicem late rotundatis, ad basin fibulatis; hypodermio aut irregulariter intertexto vel subintertexto, aurantiaco-rufescente vel ochraceo.—Tegumento stipitis duobus typis cystidiorum hymenialium simillimis dermatocystidiis efformato, dermatocystidiis erectis vel ascendantibus, sed s aepe cystidiis longioribus tenuiter vel crasse tunicatis, numerosis.—Ad lignum arborum Dicotyledonum in silva marginali. Typus a R. Singer (S 739) in ARGENTINA: Buenos Aires: Punta Lara 1–V–1966 lectus et in BAFC conservatus est.

This species has the presence of clamp connections and the relatively broader spores in common with the type species of the genus *Cyptotrama*, viz. *Cyptotrama macrobasidium* Sing. from the Yungas. Otherwise it is

closer to *C. hygrocyboides* from which it differs aside from the aforementioned characters, also by its colors, the dimorphic cystidia, and the narrower lamellae.

Flammulina

FLAMMULINA VELUTIPES (Curt. ex Fr.) Sing., Lilloa 22: 307. 1951.

A discussion, description, illustration and the complete synonymy of this species can be found in Darwiniana 13: 180. 1964.

Our Chilean material is characterized by the fact that the hymenial cystidia are scattered to extremely scarce, so scarce at times that in an entire section no cystidium can be demonstrated, and additional sections have to be made. This shows that the species known from tropical Africa, *Marasmius ferrugineoluteus* Beeli, described by Singer (Bull. Jard. Botan. de l'Etat 24: 342. 1964) is actually a *Flammulina* as we had suspected l.c.: **Flammulina ferrugineolutea** (Beeli) Sing. comb. nov. (*Marasmius ferrugineoluteus* Beeli, Bull. Soc. Roy. Bot. Belg. 60: 155. 1928).

Chilean material studied (*F. velutipes*): Malleco: Lonquimay: 18–XI–1963, Rühm 3 (BAFC).—O'Higgins: Baños Cauquenes, 5–VIII-1967, Singer M 7235 (SGO).—Valparaiso: Viña del Mar, 26–V–1967, W. Lazo Vi-37 (SGO).—Santiago: Cerro Robles, 2000 m. alt., 13–IX–1967 Singer M 7794 (SGO).—Capital, August until October, leg. Singer (SGO).

Chilean hosts: *Ulmus, Tilia, Araucaria, Nothofagus obliqua* var.

Oudemansiella

OUDEMANSIELLA PSEUDORADICATA Moser, Zeitschr. Pilzk. no. 19: 7. 1955.

Description see Moser, l.c. p. 5. We have material (W. Lazo PU-68 from Pumanque, prov. Colchagua, SGO) from outside the Southern region, but suspect that it also enters the relict forests of Central Chile. The material has most of the macro- and microscopical characters of Moser's species, although the pileus occasionally appears somewhat venose. Its relationship to *O. radicata* should be further studied.

Xerulina

XERULINA COSTESII (Speg.) Sing., Darwiniana 13: 159. 1964.

The description of this species see Singer, l.c.

Additional material from CHILE: Cautín: Cerro Nielol, 7–I–1968, leg. E. Sierra, comm. Singer M 7833 (SGO).—This material has smaller

fruiting bodies, fuscous ("Madrid" M & P) pileus with paler margin, is strongly floccose-spinose or flocculose (or mostly both), the floccons pale brownish to fuscous, diameter of pileus 5–6 mm. The lamellae were white, medium broad to mostly broad to very broad, subdistant to distant, didymous, with entire edge.—Stipe white with ocher base, then fusciduloous all over, equally flocculose as the pileus, at least towards the base, equal or subequal, often eccentric, or curved, 6–9 × 0.5–1 mm; context white, inodorous.—Spores 8–10 × 4.5–5 μ; cystidia versiform, e.gr. clavate-mucronate and 27 × 6 μ; only one 2-spored basidium seen. The hymenophoral trama is very irregular, with many lobed terminal hyphal cells; otherwise as described by Singer, l.c. – On trunk of *Aextoxicum punctatum*. This seems to be a retarded form or nanism.

Mycenella

MYCENELLA FULIGINOSA Sing., Darwiniana 13: 166. 1964.
Description and illustration see there.

Mycenella minima Sing. spec. nov.—Pileo albo, macroscopice glabro, per medium radium sulculato vel sulcato, convexo vel convexo-subcampanulato, umbone exiguo obtuso praedito vel destituto, aut subumbonato, sicco, demum interdum margine applanato vel recurvato; frequenter circum umbonem plus minusve applanato vel subdepresso, 1–9 mm lato.—Lamellis albis, distantibus (in carpophoris minoribus 8–9 lamellis percurrentibus, 2–3 lamellulis angustis, in majoribus usque ad 11 lamellis percurrentibus, usque ad 10 lamellulis praesentibus), ventricosis in maturis, latis, adnexis vel adnexo-liberis, primum subascendantibus in multis carpophoris, demum subdistantibus, horizontalibus.—Stipite albo, dein ad basin vel per tertiam inferiorem castaneo vel vinaceo-brunneo, subtiliter pruinoso vel subvelutinoso, ad apicem interdum subglabro, aequali vel leniter attenuato versus apicem, 4–15 × 0.1–0.5 mm, subinsiticio (mycelio basali reducto, e pubescentia vel pilis radiantibus sub lente visibilibus consistente sed macroscopie paullum notabili).—Contexto tenuissimo, albo, inodoro.—Sporis sine verrucis 4.5–5.8 × 4.5–5.3 μ, cum verrucis 5.5–6.5 × 4.5–5.5 μ, 7–8 verrucis fortibus obtusis, isolatis, 1–1.2 μ projicientibus, paullum longioribus latitudine vel pro ratione breviter subcylindraceis, circumferentia breviter elliptica, hyalinis, inamyloideis, appendice hilari pro ratione voluminoso praeditis.—Hymenio: Basidiis 16–22 × 6.5–7.7 μ, clavatis, tetrasporis. Cystidiis nullis; cheilocystidiis numerosis densisque, corpore basali usque ad 18 × 3–6 μ, uno vel duobus appendiculis apicalibus rostratis e.gr. 13 × 1.5 μ vel (1)–5–10

× 1–1.2 μ prolongato, ventricoso vel cylindraceo, saepe nonnullis vel multis cheilocystidiis in corpore basali sparse diverticulatis, nonnumquam prope acies sparsis.—Hyphis fibulatis, inamyloideis, in stipite parallelis et filamentosis; tramate hymenophorali regulari, haud gelatinoso; subhymenio irregulari, ex elementis exiguis brevibus efformato.—Epicute pilei ex hyphis ad latus exterius diverticulatis efformata, nonnullis dermatocystidiis clavatis divergenter diverticulatis interdum praesentibus, diverticulis (setulis) 5 × 0.7–1.5 μ.—Tegumento stipitis ex hyphis diverticulatis unilateraliter vel omnia ad latera, nec non dermatocystidiis eis pilei aut cheilocystidiis simillimis, corpore fundamentali 6–22 × 3–4 μ, rostro, ubi adest, 10–25 × 1.5 μ. Ad truncos emortuos (Laurelia vel Aextoxicum) locis umbrosis, solitario vel gregatim, Septembri et Martio mensibus fructificans. Typus (M 7533) a R. Singer lectus et in SGO conservatus est.

Material studied: CHILE: Llanquihue: Peulla, 22–III–1959, Singer M 1981 (SGO), paratypus.—Osorno: Puerto Octay, 15–IX–1967, Singer M 7533 (SGO), typus.

The spring collection (holotype collection) was collected in September, and consists of much smaller carpophores than the early March collection from Peulla.

Marasmius

MARASMIUS APORPOHYPHES Sing., Sydowia 18: 131. 1965.

Material studied: ARGENTINA: Rio Negro: Laguna Frías, 24–III–1963, Singer M 3174A, (BAFC).—B 3171 (BAFC).—Camino al Paso de las Nubes, 24–III–1963, Singer M 3181 (BAFC).—CHILE: Llanquihue: Peulla, 22–III–1959, Singer M 1996 (LIL) – M 1987 (LIL), typus and paratypus respectively.—Valdivia: Cordillera Pelada, west slope, 800 m alt., 30–III–1963, Singer M 3259 (BAFC).—400 m, 7–V–1965, Singer M 5594 (BAFC).—Concepción: Boca del Bio-Bio, 11–XI–1967, Singer M 7817 (SGO).

Hosts: *Nothofagus, Eucryphia, Saxegothaea, Fitzroya, Drimys winteri, Chusquea, Pernettia, Berberis, Peumus.*

Marasmius pacificus Sing. spec. nov.—Pileo clare alutaceo-cinnamomeo, uniformiter colorato, levi, dein sulcato, glabro, convexo, dein applanato, depressione umbilicoidea in maturis evoluta, 5–6.5 mm lato.—Lamellis albidis, dein ad pallide alutaceo-cinnamomeum vergentibus, interdum grisello-brunneolis, subangustis, acie obtusiusculis, distantibus, 1–4 lamellulis intermixtis, adnexis.—Stipite castaneo-fuligineo vel atro, primum ad apicem albido vel cinnamomeo, setoso, ex integro pilis erectis brun-

neolo-pallidis obsito,12–17 × 0.2–0.3 mm; rhizomorphis pallidis vel atris glabris interdum in vicinitate visis sed haud connexis ita ut pertenentia dubiosis sit.—Contexto inodoro (vel lauri, ex substrato?).—Sporis 6–8 × 3.5–4.1 μ, ellipsoideis, nonnullis oblongis, hyalinis, vetustis saepe stramineo-pallidis, levibus, inamyloideis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 22 × 6 μ, clavatis, hyalinis, tetrasporis. Cystidiis nullis; cheilocystidiis versiformibus, saepe ramosis vel diverticulatis.—Hyphis in tramate pilei hyalinis vel brunneo-hyalinis, defibulatis, inamyloideis; in stipite parallelis, in cortice atro-spadiceis; in interiore hyalinis, tenuiter vel crasse tunicatis, inamyloideis, defibulatis.—Epicute pilei ex elementis irregularibus neque cutem neque stratum hymeniforme formantibus, excrescentiis nodosis vel nodulis haud elevatis obtusis ornatis hypodermio ex elementis hyphalibus, repentibus, tenuiter et haud fortiter pigmenti incrustationibus brunneolis efformato.—Pilis stipitis pallide stramineo-melleis vel intense melleis, 20–40 × 6–7 μ, subcylindraceis vel subventricose elongatis, interdum constrictis vel flexuosis, membrana 0.5–1.5 μ crassa instructis, haud pseudoamyloideis nec amyloideis.—Ad folia delapsa Aextoxici, Laureliae, Myrtacearum. Typus a R. Singer (M 6707) lectus et in SGO conservatus est.

Material studied: CHILE: Valdivia: Hueycolla, 4–V–1967, Singer M 6707 (SGO), typus.

This species is easily recognizable by the lack of an alliaceous odor and of clamp connections. The other species which combine these characters have glabrous stipe.

Marasmius lomatiae Sing. spec. nov.—Pileo clare cinnamomeo-brunneo vel clare vel obscure vinaceo-brunneo, vel fusco-brunneo et margine pallidore vel albido, glabro, levi vel lenissime sulcato, conico-convexo et in sicco umbonato aut convexo et centro depresso praedito vel destituto, 5–8 mm lato.—Lamellis albis vel albidis, angustis, interdum subvenosis, distantibus vel subdistantibus (8–10 lamellis integris, 1–3 lamellulae), liberis vel adnatis, interdum, si liberis, subcollariatis.—Stipite ex integro atrocastaneo vel nigro vel subnigro et apicem versus brunneo, glabro, setoso-aequali vel rarius apicem versus leniter attenuato, insiticio, 20–25 × ± 0.3 mm; rhizomorphis sparsis, cum stipite haud connexis, fuscis vel nigris, glabris vel glabriusculis, tenuibus.—Contexto subnullo, inodoro.—Sporis 5.3–8.2 × 2.3–3.5 μ, ellispoideo-oblongis vel subfusoideis, rarius ellipsoideis, hyalinis, levibus, inamyloideis. – Hymenio e basidiis efformato et cheilocystidiis marginato; basidiis tetrasporis; basidiolis fusoideis, ambobus fibula basali destitutis. Cystidiis nullis; cheilocystidiis 22–23 × 4-4.5 μ, ad apicem appendiculatum ± 8 μ diam., appendicibus coronatim apicaliter insertis, breviter fusoideis, corpore basali hyalino

cylindraceo vel anguste clatavo.—Hyphis in tramate pilei defibulatis, hyalinis, in hymenophoro regulariter dispositis, hyalinis, inamyloideis paucis partis interioris stipitis exceptis quae lenissime pseudoamyloideae sunt.—Epicute hyalina, ramulosa vel M. androsacei modo lacerata, e cellulis hyphisque versiformibus ± diverticulatis (diverticulis hyalinis 1.5–3 × 1–2 μ) consistente.—Tegumento stipitis subnullo vel nullo; interdum ex hyphis exterioribus protuberantiae sparsae haud elevatae obtuse pulvinatae vel acutae vel subcapitatae vel ampullaceae 3–42 × 3–10 μ, ad basin saepe crasse tunicatae, ad apicem tenuiscule tunicatae (0.5 μ diam.) emergunt sed haud consistenter apparent.—Ad folia emortua Lomatiae, Myrceugenellae, Nothofagi (dombeyi). Typus a Singer (M 6044) lectus et in BAFC conservatus est.

Material studied: ARGENTINA: Neuquén, Quetrihué, 21–IV–1965, Singer M 5126 (BAFC), paratypus.—21–IV–1965, Singer M 5119 (BAFC).—Los Cántaros, 10–XI–1966, Singer M 6044 (BAFC), typus.

This is very similar to *M. aporpohyphes* from which it differs principally in the complete absence of an odor.

Marasmius aporpus Sing. spec. nov.—Pileo carneo vel cinnamomeo ("toltec", "stroller tan", demum interdum "trotteur tan"), glabro, per decimam vel duas tertias radii sulcato, primum saepe levi, haud viscido, convexo, dein centro depresso, numquam umbonato, 4–16 mm lato.—Lamellis albis, distantibus, lamellulis perpaucis intermixtis vel primum omnibus integris, demum interdum multis lamellulis intermixtis, e.gr. lamellis 11–12 integris in carpophoris majusculis praesentibus, subangustis vel sublatis, in maturis arcuatis, ad aciem albis et integris, adnatis, rarius adnato-subdecurrentibus.—Stipite atrocastaneo vel nigro, apice primum castaneo, glabro, aequali vel apice dilatato praedito, interdum etiam ad basin subdilatato, insiticio, recto vel curvato, centrali vel leniter excentrico, 4–12 × 0.5–1 mm.—Contexto tenui, albo, immutabili, inodoro.—Sporis 7.5–9.5 × 3.8–5.5 μ, ellipsoideis vel rarius oblongis, minus convexis ad latus interius, levibus, hyalinis, inamyloideis.—Hymenio basidiis formato et cheilocystidiis marginato. Basidiis 23.5–33 × 7.3–8 μ, tetrasporis, interdum paucis bisporis intermixtis; basidiolis fusiformibus, ad basin fibula destitutis. Cystidiis nullis; cheilocystidiis ad aciem tantum vel etiam prope aciem obviis, dimorphis (1) basidiomorphis, ventricoso-clavatis, integris, 22–32 × 8–14 μ, hyalinis, (2) rarioribus, irregularibus, frequenter ramosis vel appendiculatis, e.gr. 40 × 5 μ, hyalinis; cystidiolis vel basidiis monosporis sterilibus (?) interdum rarissime obviis, plerumque absentibus.—Hyphis defibulatis, inamyloideis, haud gelatinosis, filomentosis, in stipite qui tegumenti caret, omnibus parallelis.—Epicute pilei hyalina vel pallidissime salmonea (e contentu) vel mellea (e in-

crustatione tenui), sed interdum vix visibili in praeparationibus alcalinis, ex hyphis irregulariter intermixtis sed repentibus, diverticulatis diverticulis brevibus et obtusis (1–2.5 × 1–2.5 μ) ornatis sed diverticulatione intermittente ita ut videantur areae ex hyphis levibus tantum efformatae; hypodermio pallide brunneolo (NH_4OH) e pigmento mebranali sine incrustationibus, cutem constituente.—Ad ramulos emortuos ligneos arborum Dicotyledonum, gregatim e.gr. ad Aextoxicum, autumno. Typus (Singer M 6705) in SGO depositus est.

Material studied: CHILE: Valdivia: Cordillera Pelada, 50 m alt., near Hueycolla, 4–V–1967, Singer M 6705 (SGO), typus.—Chivería, 7–V–1967, Singer M 6761 (SGO), paratypus.

This species, lignicolous, with short stipe, inodorous, and clampless, without hairs on the stipe is easily recognizable. Although the epicutis is actually a relatively weak although undoubtedly present "Rameales-structure", we do not consider this species a *Marasmiellus* because of the glabrous setose stipe the well pigmented pileus and stipe, the lack of clamp connections. A similar tropical clamp-less species (inedited) has pubescent stipe, and appears to be closer to some clamped *Marasmielli*; other clamp-less *Marasmielli* are practically devoid of pigment.

MARASMIUS PILGERODENDRI Sing., Sydowia 18: 124, 1965.

Description l.c. Additional material studied: ARGENTINA: Rio Negro: Laguna Frías, camino al Paso de las Nubes, on *Fitzroya* leaves, 22–III–1963, Singer M 3135 (BAFC).—Puerto Blest, on *Nothofagus dombeyi* leaves in *Sphagnum*, 15–III–1959, Singer M 1811a (BAFC).—M 1811, M 1812 (BAFC).—CHILE: Valdivia: Mirador, 950–1000 m alt., on *Nothofagus betuloides* and *Fitzroya* leaves, 30–IV–1967, Singer M 6559 (SGO).

MARASMIUS FLOTOWIOPHILUS Sing., Sydowia 18: 125. 1965.

Description see there.

MARASMIUS POLYCHAETOPUS Sing. Sydowia 18: 129. 1965.

Description see there. This tiny, rhizomorph-producing species whose stipes mostly arise not from the substratum but from the rhizomorphs as they do in *Marasmius* with *Polymarasmius* physiognomy, has been several times re-collected:

Material studied (aside from the one indicated in the type description, l.c.): CHILE: Valdivia: Cordillera Pelada, west slope, at 880 m alt., 30–III–1963, Singer M 3258A (BAFC).—Hueycolla, 150 m alt., 1–V–1967, Singer M 6725 (SGO).—Llanquihue: 2 km from Petrohué towards Volcán Osorno, 300 m alt., 10–V–1967, Singer M 6842 (SGO).

Marasmius tenuiparietalis Sing. spec. nov.—Pileo albo, eo *M. epiphylli* omnibus characteribus simillimo.–Lamellis albis, saepe obtusiusculis, interdum furcatis vel raro intervenosis, angustis vel moderatim latis ($^1/_{10}$ pilei diametri), intermixtis, in exsiccatis flavescentibus, distantibus, adnatis, interdum subdecurrentibus, arcuatis.—Stipite albo, demum in parte inferiore frequenter brunneo, pubescente, filamentoso, pilei diametro longiore, insiticio.—Contexto inodoro.—Sporis 8–10.5 × 3–4 μ, oblongis, levibus, hyalinis, inamyloideis.—Hymenio: Basidiis 25×6.2–6.8 μ, tetrasporis; cystidiis ad aciem lateraque lamellarum, 37–60 × 6.5–11 μ, fusiformibus, apice gradatim attenuatis vel aequalibus vel subcapitatis, tenuitunicatis, hyalinis, inamyloideis.—Hyphis elongatis, haud gelatinosis, hyalinis in tramate pilei et lamellarum, tenuitunicatis, fibulatis, inamyloideis, in stipite parallelis, in tramate hymenophorali irregulariter dispositis.—Epicute pilei e cellulis vesiculosis pedicellatis tenuitunicatis (0.2–0.3 μ) hyalinis, integris, levibus, 14–24 × 11.5–14 μ, subhymeniformiter dispositis efformata.—Stipitis dermatocystidiis 16–75 × 10–14 μ versiformibus, plerumque cystidiis hymenialibus haud subcapitatis simillimis, rarius haud manifeste subcapitatis, frequentius subulatis, obtusis vel acutis.—Ad folia et petiola dejecta putrescentia e.gr. Nothofagi (*N. pumilio*), autumno. Typus a Singer (M 3563) lectus et in BAFC depositus est.

Material studied: ARGENTINA: Neuquén: "Cerro Cortinario" above Puerto Manzano, 1000 m alt., 26–VI–1964, Singer M 3563 (BAFC), typus.—ENGLAND: Wolton-under-Edge, Gloucestershire, 10–XI–1948. Dennis (K).

Marasmius epiphyllus, obviously a heterogenous species, as determined in Europe and North America, consists at least of two different taxa, one characterized by thick-walled epicuticular elements and thus found near Femsjö, Sweden on petioles of *Sorbus aucuparia* (Ulfült near Femsjö, 19–VIII–1964, Singer C 4130, BAFC) and also in U.S.A. (New Hampshire: Gilmanton, on the dead basal leaves of a species of *Solidago*, collected late fall, 12–X–1942, Linder, det. Singer, FH). Since this is the form Fries must have seen and studied, we do not hesitate to designate our Swedish collection topotype of *M. epiphyllus*, and recommend it as neo-type of the species. There is also a second species with thick-walled epicuticular bodies (see below).

The species with thin-walled epicuticular bodies has probably sligthly broader (although not broad) lamellae, and it certainly occurs in both Europe and South America. Since this species apparently lacks a valid name, we have proposed a new name for it. We have seen no material of *Agaricus retifolius* Lasch and *M. furcatus* Velen., but unless type studies on these species show that they have the anatomical characters of

M. tenuiparietalis, they are too vaguely described to be acceptable as substitute of this latter binomial.

MARASMIUS HEMIMYCENA Sing. in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 154. 1965.
Description see there.

Marasmius exiguus Sing. spec. nov.—Pileo albo, levi, frequenter leniter pellucide striatello, glabro, convexo, dein centro applanato vel depresso, 1–3 mm lato.—Lamellis albis, subdistantibus vel distantibus, satis angustis, sed interdum latiusculis vel latis, arcuatis, adnato-decurrentibus, adnatis vel decurrentibus, haud anastomosantibus.—Stipite albo, macroscopice glabro sed interdum manifeste puberulo sub lente, filiformi, frequenter curvato sed etiam recto, insiticio vel subinsiticio, 3–8 × 0.1–3 mm.—Contexto tenuissimo, albo, immutabili, inodoro.—Sporis 5–6.5 × 2.5–3.5 μ, ellipsoideis, hyalinis, inamyloideis.—Hymenio basidiis et cystidiis consistente; basidiis 15–21 × 4–5 μ, (2)–4-sporis. Cystidiis ad aciem et latera lamellarum sparsis, 30–32 × 5–6.5 μ, fusoideo-ampullaceis, apice tenui (2–3 μ diam.), hyalinis, tenui-tunicatis, apice interdum leniter granulari-incrustatulis.—Hyphis fibulatis, hyalinis, haud gelatinosis, inamyloideis, in pilei tramate radiatim dispositis, tenui-tunicatis, ad septa saepe constrictis, 5–13 μ latis, in stipite parallelis.—Epicute corticata ex elementis vesiculosis, raro subelongatis sed latis et late rotundatis, ± 30 × 9–14 μ, levibus vel crenulato-asperis, hyalinis, tenui-tunicatis efformata; dermatocystidiis in pileo nullis.—Tegumento stipitis dermatocystidiis subulatis, rarius leniter ventricosis, ad apicem obtusum gradatim fortiterque attenuatis, tenui-tunicatis, hyalinis, inamyloideis, ad apicem 3–9 μ latis consistente.—Ad thallum muscorum supra ramulos emortuos (e.gr. Rubi) nec non ad lignum putrefactum inter muscos, autumno. Typus Singer M 6577 (SGO).

Material studied: CHILE: Valdivia: Hueycolla, 1–V–1967, Singer M 6692 (SGO).—M 6582 (SGO).—M 6577 (SGO) typus.

Marasmius munyozii Sing. spec. nov.—Pileo albo, centro pallidissime cinnamomeo-ochraceo, ad marginem breviter striatulo, glabro, convexo, 5–5.5 mm lato.—Lamellis albis, distantibus (7–13 integris, compluribus lamellulis), haud anastomosantibus, angustis, dein mediocriter latis, horizontalibus, ad aciem minute flocculosis, adnexis.—Stipite albo, basin versus castaneo, pruinoso vel pubescente, filamentoso-aequali, ad basin magis puberulo sed insiticio 10–11 × 0.3–0.4 mm.—Contexto tenuissimo, pallide brunneolo in parte inferiore stipitis, ceterum albo, inodoro.—Sporis 6–7.8 × 2.2–3 μ, fusiformibus, hyalinis, levibus, inamyloideis.—Hymenio

basidiis et cystidiis admodum sparsis paullumque conspicuis consistente et cheilocystidiis marginato. Basidiis 15–21 × 6.5 μ, (2)–4-sporis. Cystidiis cellulis epicuticularibus simillimis.—Hyphis fibulatis, inamyloideis, haud gelatinosis.—Epicute pilei hymeniformi vel subhymeniformi, e cellulis vesiculosis, setulis usque ad 2.5 μ projicientibus, divergentibus, hyalinis, breviter cylindraceis, sparsis vel subdensis, in parte superiore obsitis, tenuit-tunicatis, saepe pedicellatis, 15–25 × 12.5–15 μ efformata, acie lamellarum heteromorpha.—Tegumento stipitis e dermatocystidiis efformato; dermatocystidiis usque ad 165 μ longis et (in parte inferiore) usque ad 8.5 μ latis, ad apicem longe effilatis, nonnullis in corpore basali lobato-appendiculatis lateraliter, parte effilato ± 1.5 μ crassa, membrana tenui vel moderatim crassiuscula; dermatocystidiis lobato-appendiculatis frequenter parte effilata carentibus.—Ad folia graminea in silva. Typus: CHILE: Coquimbo: Fray Jorge, 16–III–1967, Singer M 6517 (SGO), typus.

MARASMIUS OREADES (Bolt. ex Fr.) Fr., Epicr. p. 375. 1838.

A description of this in South America obviously introduced, adventicious species see in the current European and North American literature. Illustration, see Singer, Mushrooms and Truffles, frontispiece (pl. 1), 1961.

In our region, we frequently find an almost whitish-pallid form which, however, does not differ from the typical form in other respects. This form is also met with in Europe although apparently rarely.

Marasmius valdivianus Sing. spec. nov.—Pileo cinnamomeo vel brunneo ("Aztec", "bran", in siccis "Santos"), sulcato, centro fortiter umbilicato, pallidiore quam zona marginalis in vegetis, sed in siccis ibi brunneo vel atrobrunneo, in profunditate umbilici umbonato, umbone haud elevato, obtuso, sub lente in siccis tota regione centrali plerumque rivulosa et carnem albam monstrante, centro excepto convexo vel hemisphaerico, 3–6 mm lato.—Lamellis albis macroscopice ad aciem etiam albis sed sub lente leniter discoloratis, pileo concoloriter marginatis, sed discoloratio saepe partialis est, distantibus (8–11 integris, lamellulis nullis), rotundato-collariatis, sed collario frequenter ad apicem stipitis partim adnato, ita ut collarium non semper manifestum sit.—Stipite atro, ad apicem juventute albo, glabro, nitente, setoso, 8–12 × 0.1–0.2 mm, insiticio; rhizomorphis nigris praesentibus sed sparsis; stipitibus sterilibus etiam praesentibus.—Contexto tenuissimo, albo, inodoro.—Sporis 15–20.7–(22.5) × 3.5–4.2 μ, fusoideis, elongatis, rectis vel fusariformibus et subcurvatis, hyalinis, levibus, inamyloideis, appendice hilari saepe magno praedito.—Hymenio basidiis formato et cheilocystidiis marginato. Basidiis 29–40 × 7.8–8.5 μ, tetrasporis, paucis bisporis, clavatis. Cystidiis nullis; cheilo-

cystidiis elementis epicuticularibus simillimis sed multis vel interdum omnibus hyalinis et longioribus (usque ad 27 μ longis).—Hyphis in tramate pilei fortiter pseudoamyloideis, fibuligeris, haud gelatinosis et talibus hyphis etiam hymenophori tramate formato.—Epicute pilei e strato hymeniformi, cellulis *M. sicci* modo appendiculatis consistente; his cellulis in parte basali 10–25 × 7–9.5 μ, anguste vel plerumque late clavatis, hyalinis, interdum vesiculoso-pedicellatis, setulis apicalibus erectis 4–6 × 0.5–1.5 μ, melleis.—Ad lignum ramorum arborum Dictyledonum in silva gregatim, autumno. Typus Singer M 6897 in CHILE: Valdivia: Cuesta Sta. Elvira, 14–V–1967, lectus et in SGO conservatus est.—Marasmio yangambensi (congolensi) affinis.

MARASMIUS NOTHOMYRCIAE Sing., Ark. f. Botanik 4: 384. 1959.

Since the original description was given on the basis of dried material exclusively, we shall add a new description:

Pileus cinnamon to topaz color (12–C–8 to "topaz") with the zone around the center orange ("paloma" M & P), dried light orange cinnamon to tawny (between "tawny" and "cookie") or between "sayal br" and "butterscotch" (brown). The truncate center deeply umbilicate with a central flat, subumbonate or low-papillate dot, the umbilicus either whitish when fresh or "topaz" scurfy-rivulose on white ground (under a good lens, the ground color corresponding to the trama of the pileus), dried here deep gray to buff gray or whitish to light orange cinnamon to tawny, the central dot a first (fresh) concolorous with the umbilicus color, later more gray to grayish black, dried grayish black or black, sulcate all over the area outside the umbilicus, dry, glabrous, campanulate to half-barrel-shaped, then strongly convex or just convex, always abruptly umbilicate, 2–7 mm broad.—Lamellae white, with weakly to decidedly discolored ("paloma") edge and collarium, the discoloration not always complete and often visible only under a lens especially in dry condition, 11–15 through lamellae, not inserted by lamellulae, broad, attached to a wide and distinct collarium.—Stipe chestnut brown-black or black, shining, with white apex as long as the central dot of the umbilicus has not become gray or black, later concolorous with the rest of the stipe, glabrous, 15–50 × 0.1–0.3 mm, insiticious; black rhizomorphs generally numerous around the carpophores but not attached to the stipes; sterile stipes are often formed.—Context very thin, inodorous when fresh.

Spores (6)–6.5–10 × 3.5–4.5–(5) μ, fusoid, oblong-subfusoid, or ellipsoid, hyaline, smooth, inamyloid.—Hymenium consisting of basidia and bordered by cheilocystidia. Basidia e.gr. 23 × 6.5 μ, 4-spored; basidious fusoid. Cystidia none. Cheilocystidia like epicuticular broom cells, but

setulae either golden or golden hyaline or hyaline, 2 μ long.—Hyphae of pileus trama hyaline and thin-walled, with clamp connections, moderately strongly but rapidly and distinctly pseudoamyloid.—Epicutis of pileus consisting of a hymeniform layer of broom cells whose main body is hyaline and 10–23.5 × 7.5–17.5 μ, on top or in the upper two thirds divergently (*Rotalis*-type) beset with setulae which are cylindric or verrucose, almost or quite obtuse, deep golden melleous to tawny-rusty, 1.2–2.7 × 0.9–1.3 μ.

On leaves, fallen to the ground, of *Nothomyrcia, Aextoxicum, Asara,* rarely on dead wood rotting nearby, sometimes also on stems and small pieces of wood of vines in dense forest gregarious, in spring and late fall, in Juan Fernandez in March, in Central Chile's and Coquimbo's relict forests from March until August; once on dung.

Material studied: CHILE: Valdivia: Hueycolla, 500 m from Ocean, 50 m alt., 4–V–1967, Singer M 6580a (SGO).—Osorno: Lago Puyehue; 14–IX–1967, Singer M 7514 (SGO).—Valparaiso: Quintero, 5–VI–1967, leg. C. Villagrán, det. Singer M 6941 (SGO).—27–VI–1967, Singer M 7024 (SGO).—Camino Casablanca-Algarrobo, leg. C. Villagrán no. 3, comm. Singer 13–VI–1967, on dung (SGO).—Juan Fernandez: Masatierra: path to El Camote, about 400 m alt., 18–III–1955, Sparre F 56 (S), typus.—Quebrada Agujereada, about 500 m alt., 12–III–1955, Sparre F 40 (LIL), paratypus.

This species is obviously closest to *M. variabiliceps* Sing., especially its var. *heptachroinus* Sing. It differs from the latter in having shorter setulae on the elements of the epicutis of the pileus, and, perhaps as a consequence of that, in lacking a deep brown-red, ferruginous-chestnut ("Java") dry stage. All varieties of *M. variabiliceps* are tropical or subtropical whereas *M. nothomyrciae* ist restricted to the extratropical areas of Chile although it is remarkable that it was not once found on *Nothofagus* or even in *Nothofagus*-dominated woods.

Marasmius austrorotula Sing. spec. nov.—Pileo albo, exsiccatione (iam in vivo) obscurato: pallide grisello-brunneolo vel fuscidulo-griseolo, interdum iam in humidis centro fuscidulo-grisello et margine griseo-pallido, profunde plicato-sulcato, frequenter ad marginem crenato, glabro, primum campanulato et umbonato, dein semigloboso-convexo, dein convexo et centro depresso circum papillam aut umbonem, 1–3.5 mm lato.—Lamellis albis, ad aciem albis vel sub lente in siccis pallidissime brunneolo-subfuscente, distantibus (6–7 lamellis integris, lamellulis nullis), latis, rarius mediocriter latis, ample completeque collariatis.—Stipite nigro, primum ad apicem albo, glabro, insiticio, setoso-aequali, interdum flexuoso, plerumque recto, 8–13 × 0.1 mm; rhizomorphis nigris stipiti

numquam adnexis, sed prope carpophora interdum visis, tenuibus sparsis. —Contexto pro ratione crassiusculo in disco pilei, albo, inodoro.— Sporis 5.8 × 3–3.9 μ, ellipsoideis, levibus, hyalinis, inamyloideis.—Hymenio basidiis formato, cheilocystidiis marginato. Basidiis 13.5–18 × 5 μ; basidiolis fusoideis. Cystidiis nullis. Cheilocystidiis elementis epicuticularibus simillimis.—Hyphis in tramate pilei tenuitunicatis, hyalinis, fibulatis, pseudoamyloideis.—Epicute pilei elementis hymeniformiter dispositis formata, his elementis corpore basali (7)–11–22.5 × (5)–8–18.5 μ, globosis vel vesiculoso-subelongatis, hyalinis vel rarius pallide fuscidulis, tenuitunicatis vel rarius subcrasse tunicatis, cum aut sine pedicello, raro nonnullis levibus praesentibus, plerumque omnibus fere setulas 2–3 × 0.7–0.9 μ tenuiter cylindraceas vel apicem versus subattenuatas, griseo-melleas vel rarius hyalinas gerentibus, divergenter in medio superio typi *M. rotalis* modo setulosis.—Ad folia Chusqueae, solitario vel gregatim, vernalis et autumnalis. Typus (M 6045) in BAFC conservatus est.

Material studied: ARGENTINA: Neuquén: Los Cántaros, 10–XI–1966 (BAFC), typus.—CHILE: Valdivia: 5 km north of Los Conales, 14–V–1967, Singer M 6905 (SGO), paratypus.—Hueycolla, 1–V–1967, Singer M 6585 (SGO), paratypus.

This species appears to be close to *M. limosus* but has smaller spores, and seems to be quite specific for *Chusquea*.

MARASMIUS ANOMALUS Lasch apud Rabenhorst in Klotzschii Herb. viv. no. 1806. 1854.

For a description, synomymy, and illustration, see Singer, Sydowia 18: 288. 1965.

Crinipellis

CRINIPELLIS URSINA (Speg.) Sing., Sydowia 8: 119. 1954.

Mycena ursina Speg., Bol. Acad. Nac. Cienc. Córdoba 25: 9. 1921.

See Spegazzini, l.c., and Singer, l.c. This species is thus far incompletely known and appears to be very rare. It would be desirable to recollect it at its original station (Victoria, Malleco, 20–V–1918). The only other known species from Chile was found exclusively in Central Chile. It is *Crinipellis commixta* Sing.

Hemimycena

HEMIMYCENA CRISPATA (Kühner) Sing., Ann. Mycol. 41: 121. 1943.

Mycena crispata Kühner, Encycl. Mycol. 10: 686. 1938.

We give a short description of our Chilean material which we consider quite identical with the European type as collected by us in U.S.S.R.

Pileus white, more rarely yellowish white, dried sometimes becoming fulvidulous, glabrous, smooth or slightly sulculate, convex or slightly depressed in the center in age, with a slight umbo or with an abrupt long papilla, in other caps of the same station plainly obtuse, 0.5–9 mm broad. —Lamellae white or at any rate concolorous with the pileus, subdistant to very distant (often no more than 5), sometimes completely absent and hymenial surface smooth, but in most mature specimens lamellar although narrow or rather broad, at first subascendant, arcuate, later arcuate-subdecurrent, or horizontal-adnate or decurrent.—Stipe white or whitish, not viscid, glabrous to finely pubescent, smooth, equal, filamentous, sometimes flexuous, 3–15 × 0.1–0.6 mm; basal mycelium moderately abundant to scarce, white, stellate-fibrillose and more or less appressed to the substratum, more rarely somewhat woolly.—Context extremely thin, white or hyaline, inodorous.

Spores 6,5–9.5 × 3–4 μ, oblong, more rarely ellipsoid, smooth, hyaline, inamyloid.—Basidia 18–21 × 6.5–7 μ, 4-spored; cystidia none; cheilocystidia rare and inconstant to numerous and crowded, subcylindric-irregular, with an apical appendage or several including lateral appendages and/or knotty excrescencies, or short side branchlets, sometimes with broadened base, hyaline, thin-walled, inamyloid.—Hyphae with clamp connections and inamyloid; transition of hyphae of stipe to trama of pileus rather brusque but not changing in shape of cells, color of iodine reaction, but somewhat metachromatic in stipe where they are quite parallel with each other; hymenophoral trama regular, of about 10 μ broad, much-septate and narrower filamentous hyphae, about 2 μ broad.—Epicutis of pileus and covering of stipe of mainly smooth hyphal elements which are appressed and also some dermatocystidia or cystidioid hyphae which may be ascendant or erect, generally small (e.gr. 8–25.5 × 3–5.7 μ) and much like the cheilocystidia.

On dead fronds and sticks of *Blechnum chilense*, more rarely on small woody sticks (undetermined), singly but in large quantities, fall and winter.

Material studied: CHILE: Valparaiso, relict forest at Quintero, 27–VI–1967, Singer M 7031 (SGO).—M 7032 (SGO).—M 7008 (SGO).—M 7006 b (SGO).

Hemimycena nothofagi Sing. spec. nov.—Pileo albo vel albido, hygrophano, dehydratato albo et interdum haud manifeste pallidissime brunnescente in partibus, macroscopice glabro, sub lente admodum subtiliter pilosello, haud viscido, sulcato, convexo, frequenter umbilicato, 2–7 mm lato.—Lamellis albis, distantibus (usque ad 10), angustis vel mediocriter latis, ad aciem integris, haud obtusis, marginem pilei attingentibus, haud

anastomosantibus vel rarius in adultis paullum subintervenosis, adnatis vel decurrentibus, arcuatis.—Stipite albo, basin versus atrobrunneo vel ad basin fuligineo, macroscopice glabro, sub lente subtiliter sparse piloso, haud viscido, macroscopice subinsiticio sed sub lente mycelio basali albo sericeo-fibrilloso, 5–14 × 0.1–0.6 mm, ad apicem interdum usque ad 1 mm incrassato.—Contexto tenuissimo, in pileo albo, inodoro.—Sporis 6.5–9 × 3–5 μ, ellipsoideis vel oblongis, levibus, hyalinis, guttulis refringentibus vel guttula unica impletis, inamyloideis.—Hymenio: Basidiis 18–36 × 6–7.7 μ, tetrasporis, vel bisporis et tetrasporis mixtis; basidiolis haud manifeste nec constanter fusoideis. Cystidiis ad aciem et latera lamellarum sparsis 22–50 × 4.5–6 μ, hylinis, subulatis, interdum furcatis, apice subacutis vel attenuato-obtusis, tenui-tunicatis, interdum rarissimis.—Hyphis plerumque filiformibus, raro tumescentibus, fibulatis, inamyloideis, haud gelatinosis.—Epicute pilei ex hyphis filamentosis levibus et nonnullis haud elevate diverticulatis vel noduloso-asperulis et pilis elongatis efformato; hyphis appressis vel interdum nonnullis ascendentibus, densiusculis, saepe ramosulis, apicibus terminalibus diverticulo elongato vel simpliciter acutis, diverticulis usque ad 3.5 × 1.3 μ; pilis sparsis, admodum longis (cc. 150 μ), crasse tunicatis, inamyloideis, filamentosis cc. 2.7 μ latis; nonnullis pilis alii typi, plerumque ad basin incrassatis (5.3–5.5 μ), hyalinis, basin stipitis versus multis brunneis, ad apicem 2–2.5 μ latis et obtusis, demum ambobus evanescentibus.—Tegumento stipitis supra hyphas parallelas corticis pilis similibus eis pilei efformato. Ad lignum emortuum praecipue Nothofagorum, rarius Myrtacearum in silvis mixtis, vernalis et autumnalis. Typus (Singer M 3104) in BAFC conservatur.

Material studied: ARGENTINA: Rio Negro: Laguna Frías, 21–III–1963 (BAFC), typus.—18–XI–1964, Singer M 4033 (SGO).—Neuquén: Quetrihué, Arrayanes, 11–XI–1966, Singer M 6064 (BAFC).

Hemimycena patagonica Sing. spec. nov.—Pileo albo-hyalino vel albo, hygrophano, glabro, levi sed in adultis humidis usque per tertiam partem radii pellucide striato, circumferentia marginali circulari, interdum crenulata, convexo, demum applanato vel concavo, haud papillato, 5–14 mm lato.—Lamellis albis, di- vel tridymis, confertis vel subconfertis, angustis, haud vel vix anastomosantibus, haud venosis, adnexis vel plerumque adnatis, in siccis saepe apparenter decurrentibus.—Stipite albo, macroscopice glabro vel admodum subtiliter pruinoso, sub lente leniter pubescente, aequali vel lenissime aciem versus attenuato, cavo, 10–46 × 1–2 mm; mycelio basali albo, fibrilloso.—Contexto albo, inodoro, miti.—Sporis (7)–7.5–9.8 × 3–4 μ, oblongis vel fusoideis, ad latus internum frequenter planis, levibus, hyalinis, inamyloideis.—Hymenio: Basidiis

12–38 × 4.2–6.5 μ, tetrasporis; basidiolis haud manifeste fusoideis. Cystidiis nullis vel raris et tunc cheilocystidiis simillimis; cheilocystidiis 16–30 × 2–6.7 μ, inter basidia sparsis vel numerosis, haud projicientibus, ampullaceis vel ventricosis vel cylindraceis, interdum paucis vel multis capitulatis (capitulo 2–4 μ diam.).—Hyphis fibulatis, haud gelatinosis, inamyloideis, plerumque filamentosis, tramate hymenophorali regulari, tramate stipitis ex hyphis parallelis efformato, leniter metachromaticis (lilaceis) in praeparationibus azurei cresylici.—Epicute pilei tenui, ex hyphis subirregularibus, interdum ramosis, nonnullis diverticulatis (diverticulis subsparsis, nodosis vel hyphalibus usque ad 10 μ longis), nonnullis levissimis efformata et dermatocystidiis piliformibus cheilocystidiis similibus ornata; hypodermio ex hyphis usque ad 12 μ latis, haud brevibus efformato.—Tegumento stipitis pilis 20–100 × 2–2.3–(3–5) μ tenuitunicatis, hyalinis ornato.—Ad folia ramulis putridis minutis intermixta *Nothofagi pumilionis* et *Nothofagi betuloidis*, autumno. Typus (M 6988) in SGO conservatur.

Material studied: ARGENTINA: Rio Negro: Cerro Catedral, 1000 m alt., 25–IV–1965, Singer M 5188 (BAFC), paratypus.—CHILE: Santiago: Cerro Robles, 1000 m alt., 19–VI–1967, Singer M 6988 (SGO), typus.

This is a representive of the *H. lactea* group, and looks like a small representative of *Clitocybe*, sect. *Candidae*.

Mycena

Mycena haematopoda (Pers. ex Fr.) Kummer var. **chilensis** Sing. var. nov.—A var. *haematopode* differt sporis latioribus: 7.5–9.5 × 5.5–7.5 μ nec non basi cystidiorum et cheilocystidiorum granulatione atropurpurea (in ammoniaco et aqua in siccis) repleta; basidiis tetrasporis; fibulis praesentibus.—Ad truncos Eucryphiae aliorumque arborum et arbustorum in Chile a R. Singer lectus (Hueycolla, 400 m alt., 7–V–1965, M 5592); typus in BAFC.

This fungus is extremely common in South and Central Chile, perhaps identical with *M. miniata* Stevenson, Kew Bull. 19: 54. 1964.

Mycena obtusiceps Speg., Bol. Acad. Nac. Cienc. Córdoba 25: (8). 1921.

The type (LPS) is conserved but the shape of the pileus does not correspond well to the cylindric coprinoid pileus drawn by Spegazzini. The hyphae are broad, multi-septate, pseudoamyloid. Neither spores nor cystidia or cheilocystidia or basidia could be observed in our sections of the type material.

The only description available is that cited above. On leaves of *Nothofagus.*

MYCENA COPRINIFORMIS Speg., Bol. Acad. Cienc. Córdoba 25: (4). 1921.

Pileus pale dirty grayish or isabelline with whitish to gray pruina or small floccons, below them sulcate, on disc often dirty hyaline and smooth, only covered by the pruina, ovoid then hemispheric, eventually convex, with prominent subacute papilla, 1–7 mm broad.—Lamellae white, medium broad, subclose to subdistant, adnate.—Stipe cinereous to white, pruinose to finely pubescent, at least under a lens, glabrescent, 12.5–35 × 0.1–0.7 mm; basal mycelium white, but reduced to some radiant sericeous fibrils which are fugacious and radiate from a basal disc or (in the larger specimens) abrupt bulb which is smooth.—Context very thin, inodorous.

Spores 7.5–10 × 4.5–6 μ, ellipsoid, short ellipsoid, or short cylindric, hyaline, smooth, amyloid.—Basidia 28–32 × 6.5–7.5–(11) μ, (15–2–(3)–4-spored or (2)–4-spored, or (1)–2-spored. Cheilocystidia vesiculose-ventricose-clavate, diverticulate-echinate, with non-swelling non-gelatinous walls, not mucronate, thin-walled, hyaline.—Hyphae hyaline, not gelatinized, pseudoamyloid, with clamp connections.—Epicutis of pileus (pruina) consisting of diverticulated round cells, diverticula 1.5 μ high, diameter of cells 15–19 μ.—Hairs of stipe versiform, 27–52 × 5–5.5–(10) μ, often with apical and/or lateral appendages or excrescencies; in the type long scarce hairs with regular diverticulation more than 100 μ long and about 12 μ broad were also seen.

On buried rotten wood in the humus and on fallen leaves of *Lomatia.*

Material studied: CHILE: Llanquihue: El Frutillar, 15–IX–1967 (early spring !), Singer M 7543 b (SGO).—Victoria, Malleco, 10–V–1918, J. A. Campo, (LPS), typus.

MYCENA DISCOGENA Sing., Ark. f. Botanik 4: 389. 1959.

Description and illustration see there.

Material studied: CHILE: Valdivia, Mirador, 1000 m alt., 5–V–1967, Singer M 6719 (SGO).—Maule: Molco, 4–VIII–1967, Singer M 7231 (SGO).—Juan Fernandez, Masatierra, path to El Camote, 18–III–1955, Sparre F 58 A (S, LIL), typus (S) and syntypus (LIL).

Mycena mostnyae Sing. spec. nov.—Pileo primum atrocaeruleo-griseo et albo-pulverulento, dein griseo in disco et in striis, intra strias pallido, striato-sulculato et pellucide striato, convexo, obtuso, haud umbilicato, ± 3 mm lato.—Lamellis albis, subdistantibus vel distantibus, cc. 17 percurrentibus, 1–4 lamellulis, moderatim latis, haud intervenosis, subliberis

vel liberis.—Stipite albo, demum subgriseo basin versus, macroscopice glabro, sub lente subtiliter pruinato in parte superiore, pubescente in parte inferiore, 3–4 × 0.3 mm ; disco basali bene evoluto.—Contexto inodoro. —Sporis 7.5–8.5 × 3.7–5 μ ellipsoideis, levibus, hyalinis, amyloideis.— Hymenio basidiis constante et cheilocystidiis marginato. Basidiis 18.5–20 × 6–8 μ, tetrasporis. Cystidiis nullis ; cheilocystidiis 25–26 × 10–12 μ, clavatis vel vesiculosis, diverticulis spinosis in parte superiore obsitis (1–2.5 μ projicientibus), hyalinis.—Hyphis voluminosis, pseudoamyloideis, fibulatis, haud gelatinisatis.—Epicute pilei supra elementa prostrata voluminosa hypodermii e cellulis vesiculosis in parte superiore diverticulatis (1–2.5 μ) efformata, cellulis 20–30 × 12–20 μ.—Tegumento stipitis in parte superiore stipitis cystidiformibus pilis ampullaceis vel ventricosis haud acutis hylinis, 15–26 × 60–7.5 μ efformato, in parte inferiore stipitis pilis densioribus, longioribus (30–50 × 5–8 μ) apicem versus attenuatis, in regione disci basalis claviformibus.—Ad lignum emortuum arborum Dicotyledonum (*Aextoxicum, Eucryphia, Laurelia* etc.) in silva anectotrophica autumno. Typus a R. Singer (M 6867) in Chile : Osorno : Puyehue, 13–V–1967 lectus et in SGO conservatus est. Doctori Grete Mostny dedicatus est.

MYCENA DRYOPTERIDIS Sing., Ark. f. Botanik 4: 388. 1959.

Description see there.

Material studied: CHILE: Valdivia: Chivería (east slope of Cordillera Pelada), 10–V–1965, Singer M 5735 (BAFC).—Juan Fernandez, Masatierra: Quebrada de la Damajuana, 3–III–1955, Sparre 15 (S, holotypus, LIL syntypus).

MYCENA NOTHOMYRCIAE Sing., Ark. f. Botanik 4: 390. 1959.

Description see there.

MYCENA TRIPLOTRICHA Sing., Ark. f. Botanik 4: 387. 1959.

Description see there. Material from continental Chile has also been observed: Valdivia: Cayumapu, 11–IX–1967 (spring !), Singer M 7765 (SGO).

MYCENA TENERRIMA (Berk.) Sacc. Syll. Fung. 5: 298. 1887.

Description Ark. f. Bot. 4: 385. 1959.

Material studied: CHILE: Llanquihue: 2 km west of Puerto Pargua, 9–V–1967, Singer M 6821 (SGO).—Osorno: Lago Puyehue, 13–V–1967, Singer M 6868 (SGO).—Valdivia: Hueycolla, 5–V–1967, Singer M 6582 a (SGO).—Juan Fernandez: Masatierra: lower Quebrada Pangal, 24–III–1955, Sparre F 64 (S).

Mycena caesiocana Sing. spec. nov.—Pileo caesiocano ("storm gray", centro "rifle" M & P), per tres quarta radii sulculato, subtiliter pruinato macroscopice sed sub lente elevationibus minutis tantum obscurioribus in fundo albo munito, vix viscido in humidis, sed rehumectato viscoso, campanulato-umbonato dein convexo, obtuso vel subobtuso, 8–15 mm lato. —Lamellis aciem versus albis, ceterum caesiis, dein cinereis, demum griseis, subconfertis dein subdistantibus, moderatim latis, subliberis sed angustissime et haud constanter collariatis, in vetustis intermittenter intervenosis.—Stipite ad basin caeruleo, ad apicem albo, ceterum grisello-fusco, glabro ad apicem, subtiliter pruinoso sub apice, ad basin filis sericeis hyphosis tecto sed haud manifeste fibrilloso, aequali-filiformi, 25–70 × 1–1.5 mm, subinsiticio sed substrato haud immerso at facile ab eo liberato, disco basali destituto.—Contexto pallide caesio vel grisello, in cortice basis laete caeruleo, in interiore saepe albicante, tenui, inodoro.—Sporis 8.5–9.8 × 4.5–5.5 μ, ellipsoideis, hyalinis, levibus, amyloideis, depressione suprahilari destitutis.—Hymenio basidiis consistente et cheilocystidiis marginato. Basidiis 18–23 × 7–9 μ, tetrasporis. Cystidiis nullis; cheilocystidiis 19–28 × 9–13 μ, hyalinis, haud vel moderatim densis, ellipsoideis vel subvesiculosis, in parte superiore diverticulis (setulis) brevibus 1–4 × 1–1.5 μ obsitis, interdum asperulo-nodulosis tantum vel diverticulis sparsis, nonnumquam apicalibus tantum.—Hyphis tramatis pilei et tramatis hymenophoralis regularis voluminosis, elementis brevibus hyalinis, fibulatis, pseudoamyloideis, in stipite parallelis, elongatis, grisellis, ab eis pilei abrupte differentiatis, pseudoamyloideis; pigmento caeruleo basis stipitis laete azureo, granulis crystallinis formato. In zona subepicuticulari 80–100 μ crassa gelatinosa hyphis laxe dispositis, ascendentibus, tenuibus, filamentosis, 0.8–3 μ latis.—Epicute pilei densa, tenui, hyphali, hypharum terminationibus dermatocystidioideis vel diverticulatis, sed inconspicuis e.gr. 18–30 × 2.5–4 μ, plerumque apice tenuissimo acuto instructis, hyalinis.—Tegumento stipitis pilis dermatystidioideis consistente, eis 18–34 × 10–19 μ, sed pedicello 10 μ longo cc. vel breviore, corpore principali vesiculoso vel ventricoso, pedicello saepe septo delimitato, hyalinis, haud diverticulatis, levibus, obtusissimis.—Ad lignum emortuum (Perseae lingue ?) in silva subxerophytica locis subhumidis, hieme. Typus: CHILE: Santiago: prope Ranque, 6–VII–1967, Singer M 7156 (SGO), typus.—*M. cyanorrhizae* affinis.

Mycena cyanella Sing., spec. nov.—Pileo caeruleo dein griseocaesio (30–C–1 M & P vel laetiore), ad marginem frequenter albido, pellucide striato, haud viscido, glabro, campanulato, 12 mm cc. lato et alto, obtuso. —Lamellis albis, satis angustis, confertis, ascendentibus, arcuato-adnatis.—Stipite griseo vel pileo concolori (griseo-caesio), ad apicem mox albo,

glabro, haud viscido, levi, apicem versus attenuato vel ad basin incrassato, 40–45 × 1.5(ad apicem)–3.5 mm, mycelio basali fibrilloso praesente.—Contexto albo, inodoro.—Sporis 7–9.8 × 4–5.3 μ, breviter ellipsoideis, cylindraceis, oblongis, sat variabilibus, levibus, amyloideis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Cystidiis nullis. Basidiis 26–32 × 6.5–8.5 μ, tetrasporis. Cheilocystidiis 16–32 × 8–18 μ, ovalibus, ellipsoideis vel ventricosis, vesiculoso-pedicellatis, etc., obtusis vel acutis, ad apicem uno vel tribus appendiculis 2–8 × 1.2–3 μ obsitis, hyalinis, tenui-tunicatis.—Hyphis hyalinis in ammoniaco, pseudoamyloideis, fibulatis, latissimis, haud gelatinosis, in tramate hymenophorali regulari voluminosis, in hymenopodio filamentosis axialiter dispositis.—Epicute pilei ex hyphis tenuibus, repentibus, ad latus exterius diverticulatis (diverticulis numerosis, e.gr. 2 × 1.3 μ, sed interdum intermittentibus).—Ad lignum emortuum et culmos delapsos Mono- et Dicotyledonum in silvis. Typus (M 6706) in SGO conservatur.

Material studied: CHILE: Valdivia: Hueycolla, 150 m alt., 4–V–1967, Singer M 6706 (SGO), typus.—West slope of Cordillera Pelada at 450 m alt., 7–V–1965, Singer M 5471 (BAFC).—Chivería (east slope of Cordillera Pelada), 7–V–1967, Singer M 6759 (SGO).

Mycena **eucryphiarum** Sing. spec. nov.—Pileo in juvenilibus atro-caeruleo-griseo, dein caesio vel grisello-caeruleo (38–A–1, disco 39–A–1, M & P), levi, haud viscido, convexo vel semiglobato, 5–9 mm lato.—Lamellis pallidis, satis angustis, subascendentibus, mox horizontalibus, subconfertis vel confertis, liberis, interdum partim subcollariatis.—Stipite in parte superiore albido-hyalino vel grisello-pallido, in parte inferiore pallide grisello vel griseo vel caesio, macroscopice subglabro vel admodum subtiliter pubescente ex integro, aequali vel attenuato basin versus, interdum leniter subbulbuloso et sericeo-albo ad basin, 10–20 × 0.7–1 mm, mycelio basali haud fibrilloso, vix notabili, et sub lente subinsiticio.—Contexto inodoro, tenui.—Sporis 6.5–9.8 × 4–5 μ, ellipsoideis, levibus, hyalinis, amyloideis.—Hymenio basidiis consistente, cheilocystidiis marginato. Basidiis 27–28 × 8.5 μ, tetrasporis. Cystidiis nullis; cheilocystidiis (10)–16–22 × (7)–8–14–(25) μ, vesiculosis vel vesiculoso-clavatis, in parte superiore setulis subdivergentibus brevibus vel longis (usque ad 12 × 1–2 μ) obsitis, hyalinis.—Hyphis tramatis pilei et hymenophori (ibi regulariter dispositis) latissimis, pseudoamyloideis, fibulatis, hyalinis.—Epicute pilei cutem constituente, ex hyphis haud gelatinisatis hyalinis levibus vel minute inconspicueque (diverticulis usque ad 0.7 μ projicientibus) diverticulatis vel asperulis efformata; hypodermio ita ut omnes hyphae haud gelatinoso, cutem constituente, ex elementis brevibus voluminosis levibus, pigmento intracellulari dissoluto fusco-griseo impletis

efformato.—Tegumento stipitis e fasciculis aggregatis et individuis solitariis dermatocystidiorum efformato, dermatocystidiis cheilocystidiis simillimis, sed magis variabilibus, nonnullis appendiculis perpaucis obsitis, omnibus hyalinis.—Ad truncos delapsos et vegetos erectos e.gr. Eucryphiarum (an semper?) et saepe usque ad 2 m supra terram ascendentes sed haud caespitosi nec fasciculares quamquam dense gregarii, autumnalis. Typus (M 5578) in BAFC conservatur.

Material studied: CHILE: Valdivia: West slope of Cordillera Pelada at 420 m alt., 7–V–1965, Singer M 5578 (BAFC), typus.—Hueycolla, 1–V–1967, Singer M 6682 (SGO).

Mycena cyanocephala Sing. spec. nov.—Pileo caeruleo ("teal duck" Maerz & Paul) vel caeruleo-viridello, exsiccato brunnescente-fusco et subporphyrio, per unam vel duas partes exteriores radii striato vel pectinato, haud glutinoso sed subviscido in humidis, glabro, molli, convexo, dein applanato vel centro paullum depresso, 6–11 mm lato.—Lamellis albis, sed in multis aciebus pileo concoloribus, sed ibi siccicate ferruginascentibus, sobconfertis vel subdistantibus, moderatim latis, liberis vel remoto-liberis, interdum subcollariatis.—Stipite albo, ad basin plerumque caeruleo ("teal duck" M & P), subtiliter pubescente, haud glutinoso, aequali, sed ad basin in discum angustum vel sublatum aut in bulbulum dilatato, mycelii fibrillis haud ornato, 6–13 × 0.7–1 mm, disco vel bulbulo usque ad 1.5 mm diam.—Carne exigua, alba, inodora.—Sporis 8.5–12.5 × 6–8 μ, ellipsoideis vel breviter ellipsoideo-fusiformibus, sed polis rotundatis, depressione suprahilari destitutis, debiliter amyloideis, levibus, hyalinis.—Hymenio e basidiis, cystidiis perpaucis et cheilocystidiis numerosis, densis, formato; basidiis 26–31 × 8–10.5 μ, tetrasporis; cystidiis laterum lamellarum paucis vel nullis, pilis stipitis simillimis; cheilocystidiis fusiformibus, subulatis vel ventricosis, rarius hyphoidibus, nonnumquam apparenter gelatinisatis, 35–70–(125) × 6–10–(16.5) μ, pedicellatis, ad apicem subobtusis vel acutis, tenui-tunicatis, nonnullis interdum leniter crassitunicatis, incrustatione mellea, succinea vel ferruginea frequenter ornatis.—Hyphis fortiter pseudoamyloideis, in tramate valde voluminosis, fibuliferis, sed in zona subhypodermiali tenuiter filamentosis et fortiter gelatinisatis, hyphis huius strati 1–3 μ crassis, plerumque inamyloideis, incrustatione brunnea plerumque gaudentibus, laxis.—Epicute pilei tenui, ex elementis irregularibus, nonnullis diverticulatis, aliis cheilocystidiis simillimis efformata, hyaline vel brunnea, diverticulis 2–3.5 × 1 μ, tota epicute in depressionibus pectinationis pilei interrupta, semper inamyloidea; dermatocystidiis stipitis pubescentiam formantibus, subulatis vel ventricosis aut fusiformibus acutis, interdum bifurcatis, membrana tenui vel subincrassata (0.2–1.5 μ) instructis, 70–125 × 7–16.5 μ raro hyphoideis,

strato gelatinoso nullo.—Ad ligna emortua in silva, gregatim; typus (BAFC) a R. Singer lectus in Chivería, Cordillera Pelada, provinciae Valdivia, Chile, 10–V–1965, no. M 5732; paratypi: M 6845 Volcán Osorno, a dos kilómetros de Petrohué, provinciae Llanquihue, Chile; Pu-103, Pumanque, prov. Colchagua, Chile, leg. W. Lazo.—Mycenae venetae Stevenson comparanda species, ab ea stipite albo ad basin tantum caeruleo et forma cheilocystidiorum differt.

MYCENA RUBELLA Quél., Ass. fr. av. sc. C. Rouen: 2. 1878.

Description see Kühner, Encycl. Myc. 10: 559–560, 1938 (as *M. adonis* var. *rubella*). In our specimens (CHILE: Colchagua: Pumanque, 14–VI–1967, Lazo PU-91, SGO) the lamellae are white with pinkish ground, stipe at first salmon then white, spore 7–9.5 × 4.5–4.8 μ, inamyloid, basidia (1)–2-spored, cystidia scattered, 34–38 × 8.5–9.5 μ, hymenophoral trama regular; hypodermium of pinkish hyphae (from intracellular dissolved pigment); hyphae in pileus and lamellae inamyloid. We do not know at present where the limits of the geographic area of this species and the following are, but this has been found only in Central Chile thus far whereas the following species was found only in Southern Argentina.

Mycena **ribesina** Sing. spec. nov.—Pileo incarnato vel rubro ("flirt", "firefly", "Geranium", "watermelon", in juvenilibus saepe "flirt" aut "raspberry"), demum frequenter pallescente, sed haud hygrophano, haud viscido, levi vel longe sulculato-striatulo, glabro, margine demum subcrenato, convexo, obtuso vel subumbonato, in centro aut in margine demum applanato, 5–18 mm lato.—Lamellis albis vel albidis, interdum, praesertim in maioribus, carnem versus roseolis, lamellulis intermixtis, angustis vel sublatis v. latis, tenuibus vel crassiusculis, horizontalibus, confertis, adnexis vel adnatis vel decurrentibus.—Stipite juventute et demum semper albo, levi, glabro, in siccis raro pallide incarnato, haud viscido, aequali vel ad apicem vel ad basin subattenuato, 7–20 × 0.8–2 mm, mycelio basali candido radiatim fibrilloso vel tomentoso.—Contexto albo, inodoro.—Sporis 4.3–7.8 × 2.5–4.5 μ, ellipsoideis, levibus, hyalinis, inamyloideis vel vix amyloideis in juvenilibus.—Hymenio e basidiis et cystidiis efformato, basidiis 24–30 × 5.8–6.5 μ, demum interdum cystidiolis subvesiculosis tantum visis, in fertilibus (2)–4-sporis. Cystidiis moderatim numerosis ad aciem lateraque, (35)–45–58 × (5.5)–9.5–10.5 μ, levibus integrisque, ventricosis vel fusiformibus vel ampullaceis, in apicem frequenter longum et tenuem (2.6–5 μ diam.) effilatis, saepe pedicellatis, hyalinis.—Hyphis in tramate pilei et in hymenophoro haud gelatinosis, nonnullis membris brevissimis et forma sua irregulariter

versiformibus, interdum una aliaque cellula subglobosa intermixta, fibuligeris, hyalinis, inamyloideis vel nonnullis elementis interdum admodum debiliter subpseudoamyloideis, membrana tenui sed rarius subcrassiuscula instructis.—Epicute pilei ex hyphis levibus repentibus haud gelatinosis, filamentosis, sparse interdum nodulosis sed haud diverticulatis, in strato infero sed interdum ad superficiem perrumpente pigmento roseolo (in ammoniaco) intracellulari dissoluto tincta.—Ad lignum dicotyledoneum putrescente in silva. Typus (M 3500) in BAFC conservatur.

Material studied: ARGENTINA: Neuquén: Lago Correntoso, 11–III–1963, Singer M 3500 (BAFC), typus.—"Cerro Cortinario" above Puerto Manzano, 1000 m alt., 24–IV–1964, Singer M 3602 (BAFC).—Rio Negro: Cerro Catedral, 24–IV–1965, Singer M 5169 (BAFC).

This is close to *M. heroica* Sing. and *M. rubella* Quél.

MYCENA EPIPTERYGIA (Scop. ex Fr.) S. F. Gray, Nat. Arr. Brit. Pl. 1: 620. 1821.

Description see Kühner, Encycl. Mycol. 10: 347. 1938. As for variability see also Singer & Moser, Mycopath. & Myc. Appl. 26: 160. 1965. The color of the pileus varies from white to yellow (*M. citrinella*), and the odor from farinaceous to raphanaceous in otherwise indistinguishable material. The species is very common in our region on coniferous and frondose wood as well as on monocotyledonous trash.

MYCENA CHUSQUEOPHILA Sing. in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 159. 1965.

Description and illustration see there.

Mycena **nothofagetorum** Sing. spec. nov. — Pileo aurantiaco-rubro ("totem" M & P), magis flavo marginem versus, glabro, haud viscido, leniter pellucide striato, levi, convexo, 5–6 mm lato.—Lamellis luteis ("corn" M & P), latis, subconfertis arcuatis, adnatis vel adnato-subdecurrentibus.—Stipite ferrugineo-aurantiaco ("Nasturtium"), levi, glabro, haud viscido, aequali, basi acute attenuato, 45 × 1 mm cc.; haud insiticio.—Contexto concolori-pallidiore, inodoro.—Sporis 8.2–11.2 × 5–6 μ, ellipsoideis vel oblongis, depressione suprahilari, levibus, amyloideis. —Hymenio basidiis et cystidiis consistente; basidiis 30–36 × 7–8 μ, (2)–4-sporis, clavatis, nonnullis parietibus firmulis instructis, hyalinis. Cystidiis ad aciem et latera lamellarum, dimorphis (1) rarioribus, fusiformibus, obtusis, levibus, hyalinis, 40–48 × 7.2–8.8 μ, (2) numerosissimis, vesiculoso-mucronatis, subampullaceis, levibus, hyalinis, apice incrustatione hyalina caduca amporpha gaudentibus, (30)–40–63 × 18.5–21.5 μ.—

Hyphis latiusculis vel latissimis (10–25 μ) in tramate pilei et hymenophorali, pseudoamyloideis, fibulatis.—Epicute pilei cutem constituente, hyphis pallide flavidis, elongatis, subtiliter diverticulatis. Hypodermii hyphis latioribus, pigmento laete aurantiaco intracellulari, guttuliformi vel granulari.—Ad humum et quisquilias vel ad lignum putridum in silvis nothofagineis. Typus (M 3115) a Singer in Argentina, Rio Negro, Laguna Frías, 21–III–1963 lectus et in BAFC conservatus est.—*M. chusqueophilae* affinis.

Mycena austroavenacea Sing. spec. nov.—Pileo lilaceo vel hepatico (56–H–3 vel "old lavender" vel "liver br"), in centro frequenter atro-lilaceo (8–H–3), inter strias frequenter pallido, glabro, haud viscido, levi vel pellucide striato vel sulculato, convexo, dein applanato, margine demum recurvato, obtuso vel rarius subumbonato vel umbonato, 11–17 mm lato.—Lamellis sordide griseolis vel rubido-griseolis (prope "tawny birch" M & P), rarius sordide carneis vel roseolis vel pallidis, ad aciem ut minime sub lente obscure lividis vel vinaceo-lilaceis, mediocriter latis vel sat latis, subconfertis vel subdistantibus, in maturis frequenter intervenosis, horizontalibus vel descendentibus, decurrentibus.—Stipite livido vel vinaceo vel atropurpureo vel hepatico ("Kaffa", "Domigo", "carbuncle", "liver br." M & P), glabro, haud viscido, interdum subnitente, cavo, aequali, basi rotundato aut rarius acuminato, 24–54 × 1–2 mm, haud insiticio.—Contexto concolori, inodoro.—Sporis 5–7.5 × 3.2–4.2 μ, ellipsoideis vel oblongis, hyalinis, levibus, debiliter amyloideis.—Hymenio basidiis formato et cheilocystidiis marginato. Basidiis 19–31.5 × 5–7.2 μ, (2)–4-sporis aut omnibus tetrasporis. Cystidiis nullis; cheilocystidiis 18–27 × 7–13.5 μ, filamentoso-ramosis vel filamentosis cum basi tumescente vel ventricosis vel vesiculosis, appendiculis setuliformibus brevibus vel longis apicalibus vel interdum uno alioque laterali aut uno vel compluribus interdum secundario-appendiculatis obsitis (1–23 × 1.5–3 μ), pigmento intracellulari purpureo-fuscidulo vel purpureo-livido vel purpureo impletis, paucis hyalinis.—Hyphis in tramate pilei et tramate hymenophorali regulari ex elementis brevibus voluminosis, paucis filamentosis, fibulatis, pseudoamyloideis, haud gelatinosis efformatis.—Epicute pilei ex elementis hyphalibus repentibus, interdum ramosis vel sparse diverticulatis vel excrescentiis eis cheilocystidiorum simillimis ornatis, haud gelatinosis consistente, sat tenui et in adultis interdum intermittente; hypodermio ex elementis eis tramatis simillimis composito, sed fuscidulis vel praecipitationibus purpureis pigmentatis (his praecipitationibus inconstantibus sed interdum in tramate aequaliter obviis).—Ad terram et humum in silva nothofaginea. Typus (M 3125) in BAFC conservatur.

Material studied: ARGENTINA: Rio Negro: Laguna Frías, 21–III–

1963 (BAFC), typus.—Neuquén: Lago Correntoso, 25-IV-1964, Singer M 3530 (BAFC).—20-IV-1965, Singer M 5093 (BAFC).—Puerto Manzano, 22-IV-1964, Singer M 3423 (BAFC).

This grows generally under *Nothofagus dombeyi* in pure and mixed stands, mostly solitary.

MYCENA PURA (Pers. ex. Fr.) Kummer, Führ. Pilzk. p. 107. 1871.

This species is described and illustrated in the current European and North American literature, for example by Kühner l.c. p. 448. It is rather variable and common, especially in northwestern Patagonia and South Chile. In Central Chile we have encountered an inodorous form.

Mycena metuloidifera Sing. spec. nov.—Pileo murino vel griseo-umbrino-fusco ("teakwood" M & P ad discum, subpallidiore marginem versus), ad marginem interdum albo, haud viscido, glabro, per tertiam partem radii pellucide striato atque sulculato vel sulcato, conico, papillato vel subpapillato, 18–19 mm lato, 8–12 mm alto.—Lamellis albis, angustis vel sat latis, mediocriter confertis, ascendentibus vel obliquis, adnexis denteque decurrente notato.—Stipite griseo vel concolori pileo, ad apicem gradatim albo, haud viscido, glabro, 75–85 × 1–2.2 mm, gradatim apicem versus attenuato vel subaequali, mycelio basali albo vel sordido strigoso abundante.—Contexto inodoro, tenui.—Sporis (6.5)–7.5–11 × (5)–5.2–6.5 μ, ellipsoideis, levibus, hyalinis, amyloideis.—Hymenio e basidiis et cystidiis metuloideis consistente. Basidiis tetrasporis. Cystidiis (75)–100–140 × 12–28 μ, crasse tunicatis, membrana 1–3 μ crassa, ventricosis vel fusiformibus, ad apicem 1–4 appendicibus sterigmatoideis instructis, vel acute bi-trifurcatis, vel simpliciter acutis (appendicibus 2–10 μ longis), hyalinis, inamyloideis, conspicuis.—Hyphis fibulatis, pseudoamyloideis, haud gelatinosis, ex elementis voluminosis in tramate pilei nec non in tramate hymenophorali regulari efformatis.—Epicute pilei ex hyphis elongatis repentibus fuscidulo-tunicatis, superficiem versus diverticulatis (diverticulis saepe bifurcatis), rarius hyalinis efformata; hypodermio pigmento intracellulari dissoluto fuscidulo gaudente, hyphis latissimis. Dermatocystidiis in pileo nullis.—Ad terram humosam et arenosam sub arboribus. Autumno. Typus (M 6572) in SGO conservatus sst.

Material studied: CHILE: Valdivia: Chivería, 10-V-1965, Singer M 5708 (BAFC), paratypus.—Hueycolla, 1-V-1967, M 6572 (SGO), typus.

Mycena piterbargii Sing. spec. nov.— Pileo albo, glabro, viscido, mox depresso, 5–7 mm lato.—Lamellis griseis, in spatiis interlamellaribus haud intervenosis, distantibus, latiusculis, adnatis vel manifeste decurrentibus,

arcuatis vel mox descendentibus, haud ascendentibus.—Contexto inodoro. —Sporis 7–9 × 3–3.5 μ, oblongis, levibus, hyalinis, amyloideis.—Hymenio e basidiis tantum consistentibus, basidiis 19–32.5 × 5–6 μ, tetrasporis.—Hyphis fibulatis, inamyloideis, in tramate hymenophorali regulariter dispositis.—Epicute pilei ex hyphis filamentosis ascendentibus, gelatinosis efformata.—Ad terram et humum in silva nothofaginea (*N. pumilio*). Typus ARGENTINA; Neuquén, "Cerro Cortinario" supra Puerto Manzano, 1100 m alt., 26–IV–1964, leg. R. O. Piterbarg, comm. R. Singer (M 3557) in BAFC conservatus est.

Mycena camptophylla (Berk.) Sing., Ark. f. Bot. 4: 384, 1959.

Description, illustration, and synonymy, see Singer, l.c.

Aside from the bisporous form encountered in Juan Fernandez, and also in Argentina (Neuquén: Lago Nahuel Huapí, near Santa María, 30–IV–1964, Singer M 3713 and Puerto Manzano, 5–IV–1963, Singer M 3276, both at BAFC), we have likewise encountered a mixed 2–4-spored form in Chile: Llanquihue: Puerto Pargua, 9–V–1967, Singer M 6827 (SGO) which was white on the pileus but had a mostly ochraceous stipe-base. The spores were slightly smaller: 6.5–9 × 3.5–4 μ. In M 3713, we have observed a very slight cortinoid veil.

MYCENA HIEMALIS (Osb. in Retz ex Fr.) Quél., Champ. Jura Vosg. p. 110. 1872.

Below, we give a description of the Chilean material at hand:

Pileus grayish, light gray, glabrous, over half radius transparently striate, not viscid, campanulate to semiglobate, obtuse, 5–6 mm broad.—Lamellae white, not very broad, distant, at first subascendant, later arcuate-subhorizontal and decurrent.—Stipe gray with white apex, smooth, glabrous, 30 × 1 mm, not insiticious.—Context inodorous.—Spores 7.7–10.5 × 5.2–6 μ, smooth, inamyloid.—Basidia 27–30 × 9.5–10 μ, 4-spored; cystidia none; cheilocystidia 22–38 × 7–14 μ, hyaline, ventricose to vesiculose-pedicellate, with broadly rounded or at times attenuate but obtuse apex, thin-walled, smooth, basal cell also hyaline.—Hyphae inamyloid, with clamp connections, hymenophoral trama regular, of exceedingly voluminous elements as is the hypodermium which is filled with intracellular dissolved fuscous pigment, and even the hyphae of the pileus trama pigmented, only the epicutis hyaline, consisting of thin hyphae which are irregularly diverticulate; at places the hypodermial cells reach the surface and there they are occasionally provided with rather large scattered conical outgrowths.—On rotting woody branch in leafmold under *Nothofagus obliqua*, Chile: Santiago: Cerro Robles, 19–VI–1967, Singer M 6990 (SGO).

Mycena rubrimontana Sing. spec. nov.—Pileo clare brunneolo, per dimidiam radii pellucide striato, hygrophano, glabro, in margin convexo, in centro depresso, 8–9 mm lato.—Lamellis pallidis, distantibus, 15 integris praesentibus, latis, descendentibus, decurrentibus.—Stipite albo, glabro, levi, aequali, ± 20×1 mm.—Contexto albo, inodoro.—Sporis 5–6×2.5–3μ, oblongis vel ellipsoideo-cylindraceis, levibus, hyalinis, tenui-tunicatis, inamyloideis vel vix amyloideis.—Hymenio e basidiis et cystidiis composito; basidiis 15–22 × 4–6 μ, tetrasporis. Cystidiis sparsis sed fortiter projicientibus, 30–46 × 4.5–8.5 μ, lanceolato-fusoideis vel subulatis, acutis vel subcapitatis (capitulo 2.7–3 μ diam.) vel subacutis, ad apicem ± 2.5–2.7 μ latis, hyalinis.—Hyphis fortiter pseudoamyloideis, fibuligeris, in hymenophoro regulariter dispositis, sed haud parallelis, ex elementis voluminosis compositis (e.gr. 33 × 27 μ); subhymenio ex elementis exiguis irregulariter dispositis efformato, ± 10 μ crasso.—Epicute pilei ex hyphis repentibus, filamentosis, in strato superficiali hyalino-incrustatis et distanter ac minute nec regulariter diverticulatis efformata; neque in epicute neque in hypodermio pigmento incrustante praesente.—Inter Bryales et Juncaceas in zona alpina. Typus a R. Singer (M 1734) in ARGENTINA: Neuquén: Cerro Colorado, 1750 m alt., 10–III–1959, lectus et in LIL conservatus est.

MYCENA JUANIICOLA Sing., Ark. Botan. 5: 391. 1959.
Description see there.

Mycena valdiviana Sing. spec. nov.—Pileo albo, glabro, subsulculato in siccis, campanulato, 2–6.5 mm lato.—Lamellis albis, mediocriter latis, distantibus, ascendentibus et adnatis dente subdecurrente, quinque vel paullum pluribus integris praesentibus.—Stipite albo, in exsiccatis in parte inferiore leniter biso-tincto, glabro, haud viscido, filiformi, 6–15 × 0.5–1 mm; mycelio basali sericeo-radiante.—Contexto inodoro.—Sporis 9–12 × 3.5–4.5 μ, oblongis vel subfusiformibus, hyalinis, levibus, inamyloideis.—Hymenio basidiis et cystidiis formato; cystidiis ad aciem lateraque lamellarum moderatim numerosis, 18–25 × 5.5–11 μ, ampullaceis, apice 6–8 × 2–2.5 μ, interdum subcapitatis (capitulo usque ad 4 μ lato).—Hyphis hyalinis, pseudoamyloideis, in tramate hymenophorali et pilei haud gelatinosis, ex elementis latissimis saepeque abbreviatis consistente, tenui-tunicatis vel moderatim crassiuscule tunicatis.—Epicute pilei hyphis repentibus in zona externa diverticulatis formata.—Ad folia dejecta in silva. Typus: CHILE: Valdivia: Cordillera Pelada, Hueycolla fl. versus ad 420 m alt., 7–V–1967, Singer M 5466 (BAFC), typus.

MYCENA CAPILLARIS (Schum. ex Fr.) Kummer, Führ. Pilzk. p. 108. 1871.
Chilean material will be described below:

Pileus gray campanulate, with black papilla, 4 mm broad, 3 mm high.—Lamellae white, ascendant, narrow, subdistant.—Stipe light gray, but hyaline above, glabrous, not viscid, filamentous, subinsiticious, 23 × 0.2 mm.—Context inodorous.—Spores 8–11.5 × 4–5.5 μ, variable in size and shape, mostly long and relatively narrow, but also shorter and ellipsoid, almost inamyloid, smooth.—Basidia 2-spored (?). Cheilocystidia on and near edge numerous, vesiculose, some clavate, either all smooth or else slightly roughened, or else with mostly rather long and thin, apical, divergent appendages (setulae) up to 5 × 1 μ; trama amyloid; epicutis finely diverticulate.—On leaf of *Nothofagus nitida,* CHILE: Valdivia: Mirador, 1000 m a.s.l., 8–V–1965, Singer M 5608 (BAFC).

MYCENA CHLORINOSMA Sing., Rev. Mycol. 2: 232. 1937.

Description see there. This is a species rather common in tropical, subtropical and extratropical South America, and probably also in Africa, introduced to European greenhouses, and easily recognizable by the chlorine odor, the viscid, radially pectinate pileus and the free lamellae. From our region, we have the following collections:

CHILE: Llanquihue: Peulla, 22–III–1959, Singer M 1997 (BAFC).—Valdivia: Chivería, 10–V–1965, Singer M 5730 (BAFC)[1]).—Osorno: Puerto Octay, 15–IX–1967 (spring!), Singer M 7529 (SGO).—Colchagua: Pumanque, W. Lazo PU-135 (SGO).—Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6–IV–1967 (SGO).

MYCENA AUSTRORORIDA Sing., Ark. f. Bot. 4: 394. 1959.

Description see there.

Material studied: ARGENTINA: Neuquén: Quetrihué, 21–IV–1965, Singer M 5125 (BAFC).—CHILE: Valdivia: Chivería, 10–V–1965, Singer M 5722 (BAFC).—Hueycolla, 4–V–1967, Singer M 6576 (SGO).—Valparaiso: Quintero, 5–VI–1967, leg. C. Villagrán, comm. Singer M 6943, (SGO).—Quebrada Diego, M 7106 (SGO).—M 7105 (SGO)[2]).—Juan Fernandez: Masatierra: Lower Quebrada Pangal, 24–III–1955, Sparre F 66 (S).

MYCENA AMYGDALINA (Pers.) Sing., Persoonia 2: 6. 1961.

Description and illustrations see Kühner, Encyclop. Mycol. 10: 298–310, 1938 (as *M. vitilis*).

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[1]) This is a macrosporous form: Var. *macrospora* Sing. var. nov. A varietate chlorinosma sporis maioribus (7.5–12 × 5–8 μ) et basidiis 21–28 × 7.5–10 μ, bivel tetrasporis recedit. Typus varietatis (M 5730) in BAFC conservatur.

[2]) This is a larger form with pink lamellae: Var. *erythrophylla* Sing. var. nov. A varietate austrororida lamellis rosaceis nec non pileo maiore (usque ad 49 mm lato) differt. Typus (M 7105) in SGO conservatur.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 18–IV–1965, Singer M 5049 (BAFC).—Quetrihué, 21–IV–1965, Singer M 5123 (BAFC); both these collections are (1)–2–(3)-spored.—Rio Negro: camino de Laguna Frías al Paso de las Nubes, 22–III–1963, Singer M 3136 (BAFC), 2–3-spored and inodorous.—CHILE: Osorno: Lago Puyehue, 13–V–1967, Singer M 6866 (SGO)[1]), 2–4-spored.—M 6872 (SGO), basidia 2–4-spored, odor phenolic.—Llanquihue: 2 km west of Puerto Pargua, 9–V–1967, Singer M 6823 (SGO).—FRANCE, typus (L).

MYCENA PHYLLOGENA (Pers.) Sing., Persoonia 2: 38. 1961.

Description see Kühner, Encycl. Mycol. 10: 289. 1938 (as *M. vitrea* var. *tenella*). Our material has slightly larger spores (more like those indicated by Favre in Kühner, l.c. 291); therefore we give a short description:

Pileus light dull cinnamon ("Papyrus" to "tuscan" M & P), striate by transparency and sulculate over 4/5ths of radius, glabrous, not viscid, campanulate, ± 8 mm broad and ± 7 mm high.—Lamellae pale isabelline-avellaneous-flesh color ("sundown" M & P) with a grayish shade, medium broad, medium close, ascendant, adnate with decurrent tooth.—Stipe dull brownish grayish, smooth, glabrous, filamentous, equal, ± 32 × 1 mm, basal mycelium fibrillose, white.—Context partly concolorous with surfaces, partly pallid, thin, fragile, inodorous (neither raphanaceous, nor of chlorine nor of iodoform !).—Spores 9–11.3 × 4.2–6 μ, ellipsoid, smooth, more rarely oblong-cylindric, hyaline, amyloid.—Basidia 23.3–25 × 6.8–8.3 μ, 4-spored; cystidia few, but undoubtedly present on the sides of the lamellae, like cheilocystidia, the latter 14–16 × 11–14 μ (without the pedicel which reaches about 30 μ long), with short diverticula.—Hyphae not gelatinized, with clamp connections, pseudoamyloid, their elements very broad in trama and hypodermium.—Epicutis of pileus hyaline, a cutis of filamentous hyphae which are diverticulate (diverticula up to 4.5 × 1.8 μ); hypodermium of broad, smooth hyphae with intracellular dissolved pale fuscidulous pigment, also a cutis.—On rotting leafmold in mixed woods of *Nothofagus betuloides* and *Fitzroya*, CHILE: Valdivia: Mirador, 1000 m alt., 28–III–1963, Singer M 3204 (BAFC).

MYCENA MICROLEUCA Sing., Mycopath. & Mycol. Appl. 26: 157. 1965.

Description and illustration see there.

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[1]) This is an inodorous form: f., *inodora* Sing. f. n. — A f. *amygdalina* absentia odoris phenolici differt. Sporis in typo formae (M 6866) 8–9.3–(10)– × 6–6.5–(7) μ, basdiis 2–4-sporis, 28–35 × 8,5–9 μ, in M 3136 9–10.5 × 5–7 μ in basidiis 2–3-sporis. In ambobus ita ut in f. *amygdalina* hypophyllum hyalinum est. Ad humum et lignum putrefactum in Chile (typus) et Argentina, typus in SGO.

This species is rather commonly found in both Patagonia and South Chile. Sometimes it has a strong chlorine odor, sometimes it is quite inodorous. The color of the pileus is occasionally pale gray, at least in the center.

MYCENA CHLORINELLA (Lange) Sing., Ann. Mycol. 24: 430. 1936.

Description see Kühner, Encyclop. Mycol. 10: 468–473 (as *M. metata*).

Material studied (only South American): ARGENTINA: Rio Negro: Lago Nahuel Huapí, near Santa María, 30–IV–1964, Singer M 3710 (BAFC).—CHILE: Valdivia: 5 km north of Los Conales, 14–V–1967, Singer M 6900 (SGO).—Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6523a (SGO).—URUGUAY: Punta del Este, 26–V–1966, Singer B 4164 (BAFC).

The South American material is characterized by the scattered to nearly wanting pleurocystidia.

Mycena patagonica Sing. spec. nov.—Pileo griseo vel griseo-fusco, inter strias pallido, pellucide striato et sulculato vel sulcato per 4/5 radii, haud viscido, glabro, convexo, dein partim applanato vel margine recurvato, interdum campanulato-convexo, papillato, 10–15 mm lato.— Lamellis albis vel albidis, subascendentibus dein horizontalibus, mediocriter vel moderatim confertis, moderatim latis, adnatis vel adnato-subdecurrentibus vel decurrentibus.—Stipite griseo, levi, glabro, haud viscoso, aequali vel basin versus incrassato, cavo, 11–25 × 1–2 mm; mycelio basali fibrilloso, albo.—Contexto inodoro vel alcalino-chlorino.—Sporis 6.8–9 × 4.2–5.7 μ, ellipsoideis, levibus, hyalinis, amyloideis.—Hymenio basidiis et cystidiis formato. Basidiis 18–23 × 6.5–8.2 μ, tetrasporis. Cystidiis ad acies et latera lamellarum, interdum ad latera sparsis, fusoideo-ventricoso-mucronatis vel ampullaceis, rarius latiuscule fusoideis, vel cheilocystidiis et pleurocystidiis differentiatis, tunc pleurocystidiis vesiculoso-ventricosis vel ventricosis, mucronatis, plerumque late rotundatis, rarius ampullaceis, 25–30 × 9–13.5 μ, tenui-tunicatis, hyalinis; cheilocystidiis ampullaceis, 25–30 × 7.5–10.5 μ, apice 2.5–4.5 μ diam., obtuso, rarius subacuto praeditis, rarius pleuro- ita ut cheilocystidiis breviter irregulariter–que 1–2-appendiculatis (in uno carpophoro tantum visis).—Hyphis latissimis (usque ad 40 μ) multiseptatis, fibulatis, pseudoamyloideis, haud gelatinosis. —Epicute pilei haud gelatinosa, ex hyphis superne fortiter diverticulatis hyalinis consistente et cutem efformante; hypodermio fusco pigmento intracellulari dissoluto, ex elementis voluminosis efformato.—Ad frustula lignea, truncos, folia nec non ad corticem delapsam praecipue coniferarum (*Saxegothaea, Fitzroya*) in silvis. Typus (M 3164) in BAFC conservatus est.

Material studied: ARGENTINA: Rio Negro: between Laguna Frías and Paso de las Nubes, 24–III–1963, Singer M 3164 (typus), M 3182 A, M 3182 B (BAFC).

This species is a representative of the *M. alcalina* stirps and therefore close to *M. alcalina, chlorinella, humilis.* It is clearly not identical with any of these, and may be said to be for *M. humilis* what *M. chlorinella* is for *M. alcalina.*

MYCENA ALCALINA (Fr.) Kummer, Führ. Pilzk. p. 109/146. 1871.

As in the modern monographs, the species is here interpreted in the sense of Schröter. A good description see Kühner, Encyclop. Mycol. 10: 464. 1938.

Our South American material of this species is not typical for Kühner's description insofar as it always has pleurocystidia, and thus comes close to A. H. Smith's (North Am. Spec. Mycena p. 314, 1947) wider concept of the species although the spores are slightly larger than indicated by him, and more in agreement with Kühner's measurements: ARGENTINA: Buenos Aires: Parque Pereira, 20–VI–1962 (BAFC).

In Patagonia, we have only once found a form of or near *M. alcalina* which had a small papillate pileus (8.5 × 7.5 mm), white, not gray lamellae, large spores (10–13 × 5.6–5.9 μ) and 4-spored basidia. It was found on burned wood: ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 7–V–1964, Singer M 3993 (BAFC).—We suspect that this is f. *anthracophila Favre,* Res. Rech. sc. Parc Nat. Suisse, 6: 405, 1960, although we did no find the pileus and the base of the stipe so dark-colored as indicated by Favre, who, unfortunately, did not add any other data. Most of our specimens were inodorous.

MYCENA TETRASPHAEROPHORA Sing., Ark. f. Bot. 4: 393. 1959.

This species (description see Singer, l.c., with illustration) was also found in ARGENTINA: Lago Correntoso, on wood of *Nothofagus dombeyi,* 11–III–1963, Singer M 3502 (BAFC), with the spores very sligthly larger: 6.8–9 × 5.5–7.8 μ.

Mycena hypsizyga Sing. spec. nov.—Pileo ochraceo-cinnamomeo vel fulvo, glabro, per $^2/_3$ radii sulcato, semiglobato, dein convexo, haud repando, neque papillato neque umbilicato, exsiccatione marhine deflexo et nonnumquam apicem stipitis attingente, 4–5 mm lato.—Lamellis alutaceis, distantibus, adnatis.—Stipite macroscopice glabro vel subglabro, concolori, curvato, insiticio, longitudine diametrum pilei aequante vel paullum superante, 1 mm lato.—Contexto tenui, inodoro.—Sporis 9.5–13 × 8–11 μ, breviter ellipsoideis vel subglobosis vel guttiformibus, depres-

sione suprahilari paullum profunda et apiculo moderatim magno excentrico praeditis, levibus, amyloideis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 35–40 × 9.7–10.3 μ, bisporis. Cystidiis nullis; cheilocystidiis (sine appendiculis setuliformibus) 7–15 × 3–7.5 μ, clavatis, in parte superiore appendiculis setuliformibus 2.5–5 μ longis divergentibus ornatis, hyalinis. Acie lamellarum heteromorpha.—Hyphis defibulatis, pseudoamyloideis (cinnamomeo-roseis), haud gelatinosis. Tramate hymenophorali ex hyphis moderatim latis (3–8.5 μ) hyalinis efformato, regulari; subhymenio ex elementis tenui-filamentosis, irregulariter intertextis, multiseptatis efformato.—Epicutis pilei hyphis generatim repentibus, haud gelatinisatis, pigmento brunneo fortiter incrustatis, interdum in massa intricate intertexta nodose conglobatis, superficiem versus diverticulatis, diverticulis 3–9 μ longis, spinosis, saepe furcatis.—Tegumento stipitis eo pilei simillimo.—Ad corticem arborum vivarum (Coniferarum et frondosarum), admodum gregatim, tarde autumno et praecociter verne fructificans. Typus: ARGENTINA: Buenos Aires: Sierra de la Ventana, 14–XI–1962, Singer S 231 (BAFC).—Delta del Rio Paraná, 12–VI–1965, Singer S 607 (BAFC), paratypus.—Also observed in Northwestern Argentina.

This characteristic species of stirps Pseudocorticola, or section *Corticolae* is the only one approaching our region as far as we know now, but even so, it seems to be rather subtropical to warm-temperate than subantarctic.

Mycena saxegothaeae Sing. spec. nov.—Pileo atrogriseo vel fusco, ad marginem pallide fuscidulo-griseo, glabro, mox per ⅔ radii pellucide striato, primum cylindraceo, dein semiglobato vel obtuse conico vel plerumque convexo, 8–11 mm lato.—Lamellis candidis vel albidis vel albido-subcinereis, ascendentibus, dein obliquis, demum subhorizontalibus, mediocriter latis et confertis, adnexis vel adnatis.—Stipite atrogriseo dein de apice basin versus pallidiore, griseolo, glabro, aequali, 15–30 × 1–1.5 mm, in juvenilibus interdum breviore et crassiore; mycelio basali fibrillose, albo.—Contexto inodoro, in stipite in juvenilibus succo aquoso hyalino repleto.—Sporis 6.8–9.8 × 4.5–5.7 μ, ellipsoideis, levibus, raro cylindraceis vel oblongis, hyalinis, amyloideis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 20–34 × 6.7–8.8 μ, tetrasporis. Cystidiis nullis; cheilocystidiis ad aciem et prope aciem numerosis, cylindraceo-subventricosis vel clavato-subventricosis vel plerumque ventricosis et in parte media vel in terto supero crassioribus, mucrone breviusculo angusto subacuto vel subacuto-obtusato apicaliter ornatis, basidiis vix longioribus.—Hyphis fibulatis, pseudoamyloideis.—Epicute pilei ex hyphis filamentosis vel latiusculis diverticulatis (laxe vel dense, obtuse) efformata, diverticulis e.gr. 2.7 × 1.3–2.2 μ; hypodermio ex hyphis latissimis (usque ad 30 μ), multi-septatis, fuscidulis pigmento dissoluto

intracellulari causa efformato.—Ad lignum Saxegothaeae nec non ad ramulos et folia dejecta Austrocedri et Lomatiae. Typus (M 5059) in BAFC conservatus est.

Material studied: ARGENTINA: Rio Negro: Laguna Frías, 21–III–1963, Singer M 3117 (BAFC).—Santa María, 19–IV–1965 (BAFC), typus.

This species is close to the *Mycena alcalina* complex, but inodorous, with characteristic, simple (not branched) cystidia on the edges only or with scattered ones near the edges, with quite obtuse pileus, and smaller carpophores. The originally cylindric, later repand pileus seems characteristic also. This might be considered an inodorous form of *M. chlorinella*, but we have observed that species at the same station as the type of *M. saxegothaeae* and compared them carefully, considering them different, even in cases where the chlorine odor of *M. chlorinella* was not distinct.

Mycena lazoi Sing. spec. nov.—Pileo atrogriseo in centro, griseo marginem versus, levi vel 1/2-sulculato, haud viscido, glabro, convexo, papillato, ± 7 mm lato.—Lamellis griseis, aciem versus griseo-pallidis, angustis, oblique ascendentibus vel subhorizontalibus, magis horizontalibus in adultis, acie integris, subconfertis vel mediocriter confertis, adnexis vel adnatis.—Stipite griseo, subtiliter longitudinaliter subsericello vel glabro, levi vel sublevi, sed basin versus e mycelio basali fibrilloso subpubescente, aequali, filiformi, ± 16 × 0.8 mm.—Contexto inodoro.—Sporis 9.5–13 × 5–6.5 µ, oblongo-cylindraceis, levibus, hyalinis, amyloideis.—Hymenio basidiis cystidiisque formato. Basidiis 28–31 × 9 µ, tetrasporis. Cystidiis ad aciem numerosis, ad latera admodum sparsis sed haud absentibus, 36–52 × 12–19 µ, vesiculosis vel ventricosis, late rotundatis, nunquam ampullaceis neque appendiculatis vel mucronatis, integris, hyalinis, tenui-tunicatis.—Hyphis fibulatis, pseudoamyloideis, haud gelatinosis.—Epicute pilei tenuissima, inamyloidea, ex hyphis fortiter diverticulatis (3–10 × 1.5 µ) efformata; hypodermio ex elementis voluminosis catenulatis (cutem efformantibus) consistente.—Stipite strato gelatinoso superficiali destututo.—Ad lignum Myrtecearum (?) in silva montana terrae arenosae immersum. Typus in CHILE: Santiago: Cerro Robles, 17–VI–1967 a W. Lazo lectus et a R. Singer, M 6973, communicatus et in SGO conservatus est. – A *M. abramsii* carpophoris minoribus, a *M. fernandeziana* sporis maioribus magis elongatis, ab ambabus forma cystidiorum et diverticulatione hypharum epicuticularium forti differt.

Mycena hyalinotricha Sing. spec. nov.—Pileo albo, in humidis hyalino, in exsiccatis interdum grisascente sed plerumque ablido, subtiliter longe piloso-pubescente sed macroscopice interdum apparenter glabro, sub lente pilis longis hyalinis interdum caducis ornato, hygrophano, haud viscoso,

convexo, obtuso, frequenter demum aut exsiccatione umbilicato, 1–7 mm lato.—Lamellis albis, angustis vel latis, confertis vel distantibus, arcuatis, haud ascendentibus, horizontalibus, didymis, adnato-decurrentibus vel decurrentibus.—Stipite albo, interdum demum vel exsiccatione grisello, ut minime ad basin, sed frequenter persistenter albo, macroscopice subtiliter pubescente vel apparenter glabro, sed sub lente semper pilis subtilibus, hyalinis pubescente, haud viscido, levi, centrali, aequali vel ad basin (rarius) incrassatulo, filiformi, ad basin discoide bel bulbillose delatato et puberulo, rarius haud dilatato, 4–48 × 0.1–0.7 mm; mycelio basali ut minime sub lente radiatim sericeo vel puberulo-fibrilloso, albo.—Context albo, tenuissimo, immutabili, inodoro.—Sporis 5.5–9.8 × 2.5–4.3 μ, raro usque 10 × 4.5 μ, cylindraceo-vel fusoideo-oblongis, ad latus interius frequenter applanatis, levibus, hylinis, amyloideis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 17–19 × 6–7 μ, tetrasporis. Cystidiis nullis; cheilocystidiis numerosis, 14–35 × 5.5–12 μ (corpore basali), interdum apice integris et late rotundatis, semper autem multis characteristice apicaliter effilatis vel furcate bi-effilatis vel apicibus effilatis secundario-furcatis, apice vel apicibus usque ad 50 μ longis, plerumque usque ad 36 μ, 2 μ cc. latis et obtusis, plerumque filiformibus, hyalinis.—Hyphis fibulatis, pseudoamyloideis, in parte superiore tramatis pilei latissimis et multi-septatis, haud manifeste gelatinosis in ulla parte carpophororum, in stipite 6–12 μ latis, in eius cortice 2–5.5 μ latis, ubique interdum septis secundariis interspersis.—Epicute pilei ex hyphis stratum tenue et intermittente efformatibus, interdum debiliter intermittenterque diverticulatis et dermatocystidiis obsitis formata; dermatocystidiis cheilocystidia in mentem revocantibus, pro ratione paucis typi vesiculoso-ventricoso haud effilati et pro ratione multis effilatis, interdum leniter incrustatis (ita ut rarius cheilocystidia !), 20–175 × 3–12 μ, parte effilata 1–2 μ crassa, obtusa vel acuta (frequentius obtusa). Hypodermio ex elementis voluminosis interdum firme vel crassiuscule tunicatis hyalinis cutem formantibus efformato.—Tegumento stipitis e dermatocystidiis consistente, his eis pilei simillimis. Dermatocystidiis omnibus haud amyloideis vel pseudoamyloideis, sparsis vel numerosis sed haud hymeniformiter vel palisadiformiter dispositis.—Ad folia tenacia (Nothofagi obliquae, Drimyis, Lomatiae, Aextoxici, Myrtacearum, etc.) solitario vel gregatim, rarius ad ligna putrida harum plantarum in silvis. Typus (M 6810) in SGO conservatur.

Material studied: CHILE: Llanquihue: 2 km west of Puerto Pargua, 9–V–1967, Singer M 6828 (SGO).—El Frutillar, 15–XI–1967, Singer M 7543, M 7543 a, M 7546 (SGO), foliicolous.—10 km north of Colaco, 9–V–1967, Singer M 6810 (SGO), typus, foliicolous.—Valdivia: Mirador, 1000 m alt., 30–IV–1967, Singer M 6561 (SGO).—Colchagua: Pumanque,

29–V–1967, W. Lazo PU-45 (SGO).—Coqimbo: Fray Jorge, 16–IV–1967, Singer M 6524 (SGO), lignicolous.

MYCENA DESFONTAINEAE Sing., in Sing. & Moser, Mycopath. & Myc. App. 26: 157. 1965.

Description and illustration see Singer & Moser, l.c.

This species has also been found further north than the type locality: CHILE: Maule: Molco, 4–VIII–1967, Singer M 7221 (SGO).—Between Chovellén and Trehualemu, 3–VIII–1967, Singer M 7212 (SGO).—Coquimbo: Fray Jorge, 10–XI–1967, leg. Dr. Franz, comm. Singer M 7830 (SGO), on *Aextoxicum* leaf.

This species is at times rather similar to *M. hyalinotricha* but lacks the pilose dermatocystidia.

Mycena munyozii Sing. spec. nov.—Pileo griseo vel dilute griseo, ad marginem concolori vel albido, in adultis per medium radium pellucide striato atque plerumque sulcatulo, glabro, haud viscido, campanulato vel conico-obtusato-truncato, 2.5–5 mm lato et 2.5–4.5 mm alto.—Lamellis albis, subdistantibus vel distantibus (e.gr. 13 integris + compluribus lamellulis praesentibus), satis angustis, ascendentibus, demum interdum subhorizontalibus, adnexis vel adnatis, interdum demum secedentibus.—Stipite ad apicem albo, basin versus griseo, in juvenilibus saepe ad apicem etiam grisello, haud viscido, macroscopice glabro, sub lente primum subtilissime pubescente dein grabrescente, aequali vel basin versus lenissime attenuato, 12–45 × 0.3–0.5 mm, mycelio basali strigoso, conspicuo, albo.—Contexto tenui, inodoro.—Sporis 8–11.5 × 4.8–6 μ, late ellipsoideis vel oblongis (proportionibus variabilibus), levibus, hyalinis, amyloideis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 22–32 × 7–9 μ, tetrasporis. Cystidiis nullis vel cheilocystidiis aequalibus et prope aciem tantum sparse visis, plerumque absentibus. Cheilocystidiis ampullaceis, 30–80 × 5–10.3 μ, apice mediocriter longo vel longo, aequali vel apicem versus attenuato vel e contrario ad apicem subcapitulate incrassato (capitulo tunc 3–7.5 μ lato), 3–4.5–(7) μ lato instructis, hyalinis, sed interdum incrustatione subtili granulari pallide mellea obtectis; acie lamellarum heteromorpha.—Hyphis tramatis et hypodermio ex elementis latissimis, frequenter brevibus, pseudoamyloideis, fibuligeris consistente, haud gelatinosis.—Epicute pilei subnulla, sed hyphis latis exterioribus fortiter denseque diverticulatis, diverticulis e.gr. 4 × 0.8 μ. Hypodermio pigmento dissoluto intracellulari porphyrio-fusco vel fuscidulo (in centro pilei) repleto.—Ad folia tenacia arborum (Myrceugeniae, Aextoxici, Saxegothaeae), in silvis. Typus (M 6951) in SGO depositus est.

Material studied: CHILE: Valdivia: West slope of Cordillera Pelada,

at 800 m alt., 30–III–1963, Singer M 3257 (BAFC).—Valparaiso: Quintero, 5–VI–1967, C. Villagrán, comm. Singer M 6951 (SGO), typus.—Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6523 (SGO).

This species, dedicated to my friend and colleague Ing. Carlos Muñoz Pizarro, who introduced me to the flora of the forest relict at Fray Jorge, was at first not clearly separated from the slightly larger *M. saxegothaeae* which also has different cheilocystidia. It is extremely close to the *M. alcalina* complex but always small and inodorous, foliicolous, without pleurocystidia. Although it occasionally grows in company of *M. chlorinella,* we do not believe that it is an inodorous form of the latter.

MYCENA THYMICOLA Velen., Ceské Houby 2: 304. 1920.

Description of our Southern material:

Pileus graysh fuscous, not viscid, three quarters of radius transparently striate, glabrous, convex or low-campanulate, somewhat repand in age, 12–18 mm broad.—Lamellae gray with reddish pink edges, these becoming brown when dried, broad, distant, sinuate-adnexed.—Stipe gray, not viscid, glabrous or finely fibrillose below, hollow, becoming distinctly yellow on drying (between "banana" and "brass" M & P), ± 25 mm long, 2–3 mm broad, subequal or more commonly attenuated towards apex (which may be as thin as 1 mm across); basal mycelium scanty, fibrillose, white.—Context with a weakly pungent odor, of smoke.

Spores 8–11.7 × 5–6.5 μ, ellipsoid, rarely oblong or ovoid, hyaline, smooth, amyloid.—Hymenium consisting of basidia and margined by cheilocystidia, few of these slightly away from edge in some collections, Basidia 40 × 10.2–11 μ, 4-spored. Cheilocystidia 40–53 × 6–12 μ, with ventricose-inflated base and long attenuated neck which may be bifurcate and about 3 μ wide, subacute to obtusate, melleous-hyaline in KOH (studied on dried material).—Hyphae in trama very broad and voluminous, with clamp connections, pseudoamyloid, not gelatinized.—Epicutis of pileus a thin non-gelatinized zone of repent diverticulated hyphae.

On the ground in pastured meadows. CHILE: Llanquihue: 2 km west of Puerto Pargua, 9–V–1967, Singer M 6826 (SGO).

If this, as claimed by Kühner, really is a variety of *M. avenacea* sensu Kühner, the macrospecies should be named *M. thymicola* since the species described by Fries as *Agaricus avenaceus* can hardly be this. *M. plicosa* sensu Velen. would be another form of that complex. However, it seems likely that *M. thymicola* is specifically distinguishable from *M. avenacea* sensu Kühner.

Mycena novissima (Speg.) Sing. comb. nov.

Agaricus novissimus Speg. Bol. Acad. Nac. Cienc. Córdoba 11: 143. 1887. *Omphalia novissima* (Speg.) Sacc., Syll. 9:

Pileus hyaline-white when humid, white when dehydrated, hygrophanous, slightly striate, ± sulcate when dry, not viscid, glabrous, convex then truncate in center or depressed to applanate, 2–8 mm broad.—Lamellae white, broad, distant, horizontal, in the larger caps didymous, adnate to subdecurrent.—Stipe whitish-hyaline, or white, glabrous, not viscid, smooth, tubulose, filamentous, 4–12–(30 according to Spegazzini) × 0.3–0.8 mm; basal mycelium silky-fibrillose-stellate, white.—Context white, thin, inodorous.

Spores 7–9.5 × 3.5–5.3 μ, ellipsoid to oblong, hyaline, smooth, amyloid.—Hymenium of basidia and cystidia. Basidia 23–27 × 4.7–9.2 μ, 4-spored, very few 2-spored ones intermixed. Cystidia on edges and sides equal, 21–33×6–12 μ, ampullaceous, hyaline, ventricose below, abruptly or gradually tapering into a cylindric or subcylindric not very long "neck" which may be imbedded in a hyaline resinaceous or glutinous matter, with thin walls, entire and simple.—Hyphae with clamp connections, hyaline, pseudoamyloid.—Epicutis of pileus showing the external superficial hyphae very slightly verruculose-uneven or subsmooth, hyaline, poorly individualized.

In large populations but singly on fragment of *Chusquea,* lichens, and other litter on the ground in woods.

Material studied: CHILE: West slope of Cordillera Pelada, at 480 m alt., 7–V–1965, Singer M 5467 (SGO).–The type has not been found, but the description is applicable only to this species. It was originally described from Tierra del Fuego, Staten Island.

MYCENA BLECHNOPHILA Sing., in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 156. 1965.

Description see there.

MYCENA ALBOGRISEA Peck, Bull. N. Y. St. Mus. 116: 27. 1907.

Prunulus albogriseus (Peck) Murr., North Am. Fl. 9: 237. 1916.

Pileus gray, grayish fuscous ("Santos", "teakwood" M & P), sometimes with whitish margin, glabrous, more or less hygrophanous, and somewhat fading (sometimes to pallid) when dehydrated, not viscid, sulcate, sulculate or at least transparently striate over up to 5/6th of the radius, at first almost ellipsoid when young, soon conic to campanulate, with or without an acute papilla or on obtuse umbo, 9–13 mm broad, and more or less the same height.—Lamellae white or whitish, more rarely pale sordid grayish, rather narrow to rather broad, ascendant, subclose, ad-

nexed to adnate.—Stipe gray with white apex, or entirely light sordid gray to gray, smooth, glabrous, not viscid. equal or sometimes very slightly and gradually tapering upwards, 50–97 × 1–2 mm; basal mycelium white, fibrillose.—Context inodorous.

Microscopical description of the (typical) 4-spored form: Spore (8)–9–11.3–(12.3) × (4)–4.8–6.2 μ, oblong, fewer ellipsoid to ovoid, few somewhat coma-shaped and curved, or cylindric, smooth, hyaline, amyloid.—Hymenium consisting of basidia and cystidia, margined by cheilocystidia. Basidia 4-spored, 22–25 × 5.3–7.2 μ, cystidia and cheilocystidia very similar to each other, 23–42 × 12–27 μ, vesiculose, pedicellate, rarely not or scarcely pedicellate, evenly and regularly beset with setulae which cover its larger (upper) part, setulae 0.5–2.3 μ projecting.—Hyphae of pileus and hymenophore trama very broad and voluminous, nowhere gelatinized, filled with a fuscidulous sap in the upper part of the pileus context (subhypodermial layer) and the context of the lower portion of the stipe, but often so dilatedly that they may easily pass for hyaline in KOH under oil immersion, otherwise hyaline, everywhere with clamp connections and pseudoamyloid.—Epicutis of pileus not gelatinized, hyaline, strongly diverticulate, some diverticula branch-like and hyphal and 15–55 μ long, most short (1.3–2.5 μ) Hypodermium broad-celled, but always hyaline.

2-spored forms: Spores as above, 8.5–11–(13) × 4–5.2 μ, cylindric, oblong, some sligthly coma-shaped. Basidia 2-spored. Otherwise like 4-spored form. It is noticeable that the spores of the 2-spored form are not, as usual, larger than those of the 4-spored form, but merely narrower.

On earth and forest humus in mixed and frondose woods, exceptionally on pieces of decayed wood, sometimes among mosses (not *Sphagnum*), fruiting in late summer and fall.

Material studied: ARGENTINA: Neuquén: Lago Espejo Chico, in *Nothofagus alpina* wood, 22–IV–1965, Singer M 5133 (BAFC), bisporous. —Puerto Manzano, 8–IV–1963, Singer M 3319 (BAFC), 4-spored, in *Austrocedrus-Nothofagus-dombeyi* woods.—Rincón, 13–III–1963, Singer M 3545 (BAFC).—CHILE: Valdivia: Mirador, 1000 m, 28–III–1963, in *Nothofagus nitida* and *N. betuloides* woods, Singer M 3205 (BAFC), 4-spored.—West slope of Cordillera Pelada, 480 m alt., on rotten wood of *Eucryphia* and *Saxegothaea*, 7–V–1965, Singer M 5472 (BAFC).

A. H. Smith considers this species the same as *Mycena filopes*, but Fries's descriptions do not fully agree inasmuch as the lamellae are given as free. Other authors have interpreted the Friesian species in different form. Since no type specimens are conserved, this classical species must be considered a n o m e n d u b i u m.

Among the species of this group, *M. albogrisea*, one of the commonest

in our region, is characterized by the lack of an odor, the grayish to fuscous color, the long stipe, the relatively narrow, especially in the bisporous form, and medium sized spores, the presence of echinate cystidia on the sides of the lamellae, and the absence of pigment in the hypodermium.

Mycena turficola Sing. spec. nov.—Pileo griseo vel fusco-griseo (e.gr. "Santos" M & P), glabro, per 1/2 vel 4/5 radii pellucide striato vel interdum sulculato, inter strias concolori vel pallido, haud viscoso, margine recto haud projiciente, campanulato, margine demum interdum recurvato, haud applanato, 3–12.5 mm lato et 3.5–8 mm alto.—Lamellis albis vel cinereis, frequenter griseolis et ad aciem pallidis, ascendentibus, angustis vel mediocriter latis, confertis vel subdistantibus, adnexis vel adnatis.—Stipite griseo, raro fusco-pallido, ad apicem frequenter albo, haud viscido, glabro, aequali, 17–55 × 0.5–1.5 mm; mycelio basali fibrilloso, albo.—Contexto tenui, inodoro.—Sporis 7–11 × 5–6.5 μ, ellipsoideis, rarius cylindraceo-suboblongis, quotiente (longitudo: latitudo) = 2 vel minore, levibus, hyalinis, amyloideis.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis 22–31 × 6.8–8.5 μ, aut omnibus tetrasporis aut (3)–4-sporis aut 2–3–(4)-sporis aut omnibus 2-sporis. Cystidiis ad latera lamellarum admodum sparsis vel moderatim numerosis, cheilocystidiis aequalibus. Cheilocystidiis vesiculosis, interdum longe pedicellatis, setulis regulariter obsitis in parte superiore, divergentibus, hyalinis, 20–44 × 11–21 μ, setulis 1–3 μ longis.—Hyphis fibuligeris, pseudoamyloideis, in tramate et hypodermio pilei et in trama hymenophorali regulari ex elementis voluminosis efformatis, haud gelatinosis.—Epicute pilei tenui ev tenuissima, interdum fugaci, ex hyphis filamentosis, hyalinis, appresse repentibus, parce diverticulatis (1–2 μ). Hypodermio pigmento dissoluto intracellulari griseo-stramineo vel griseo-fuscidulo, rarius subnullo gaudente.—Ad fragmenta plantarum et ad solum turfosum nec non ad terram arenosam vulcanicam inter muscos, ad Blechna, ad Agathem nec non ad Umbelliferas, locis apricis, autumnalis. Typus (M 6745) in SGO conservatus est.

Material studied: CHILE: Valdivia: Near Mirador, "Turbera Mimi", 900 m alt., 6–V–1967, Singer M 6737 (SGO).—"Turbera Hernandez", 6–V–1967, Singer M 6745 (SGO), 4-spored, typus.—*Dacrydium* bog at 800 m, 5–V–1965, Singer M 5521 (BAFC), 2-spored.—Osorno: Volcán Osorno, 900–1000 m, 12–V–1967, Singer M 6854 (SGO), 2–3–(4)-spored.

This is a banal looking species near *M. albogrisea* but characterized by its apparently exclusive occurence on peaty soils and volcanic sands, in an average broader spores and slightly smaller carpophores, potentially pigmented hypodermium, and much less diverticulate epicuticular hyphae.

These appear to have a tendency to dissolve or disintegrate in old specimens which have once been annotated as being viscid.

MYCENA ATROALBOIDES (Peck) Sacc., Syll. Fung. 5: 276. 1887.

Since our Patagonian form differs in some regards from the original description as well as from that given by A. H. Smith in his monograph, we describe our specimen (only once found) which differs from the preceding species by the complete absence of pleurocystidia and the pinkish lamellae as well the habitat.

Pileus fresh cinereous or light cinereous, dried dull cinnamon grayish, sulcate over three fifths of the radius, glabrous, not viscid, 10 mm broad, campanulate and obtuse, 8 mm high.—Lamellae pinkish "blush" M & P, narrow, ascendant, subclose, adnexed, tending to be collariate.—Stipe pale gray below, white above, glabrous, not viscid, 39 × 1.5 mm, not insiticious.—Context inodorous.—Spores 7.5–9.5 × 4.5–5.5 μ, ellipsoid to oblong, smooth, amyloid.—Basidia 2-spored. Cystidia none; cheilocystidia either clavate with up to 10 μ long straight spinose setulae or globose to subglobose with shorter more obtuse setulae (2–4 × 1 μ), main body 15–34 × 12–26 μ.—Hyphae with clamp connections, broad in lamellae and the pigmented hypodermium, pseudoamyloid.—Epicutis of pileus hyaline, with repent diverticulate hyphae.—On earth among herbs in moderately dense woods of *Nothofagus antarctica*. ARGENTINA: Neuquén: Arroyo Frutillas, 28–IV–1964, Singer M 3616 (BAFC).

MYCENA MIRATA (Peck) Sacc., Syll. Fung. 5: 290. 1887.

Description see A. H. Smith, North. Amer. Spec. Myc. p. 113, with illustration, 1947.

Mycena minutuliaffinis Sing. spec. nov.—Pileo albo, centro subsordido, glabro, levi, obtuso, haud viscido, convexo, 4.5–7 mm lato.—Lamellis albis, subangustis, distantibus, adnatis dente decurrente, subarcuatis, haud ascendentibus.—Stipite albo, in vetustis subfuscidulo basin versus, glabro, haud viscido, 5–8 × 0.6–0.8 mm, aequaliter substrato affixo fibris et fibrillis subradicantibus vel membranam coalescentia formantibus quae juventute subdiscoideformiter, demum fibrillis horizontalibus stellatis mycelium basale efformat.—Contexto albo, immutabili, inodoro.—Sporis 8–9 × 5.5–6 μ, ellipsoideis, hyalinis, debiliter amyloideis.—Hymenio e basidiis formato et cheilocystidiis marginato. Basidiis 20–29 × 7.5–9.5 μ, clavatis, hyalinis, tetrasporis, sterigmatibus late curvato-spinosis. Cystidiis nullis; cheilocystidiis 18–25 × 11–14 μ, vesiculosis, breviter pedicellatis, diverticulatione humili leniter asperulatis in parte superiore vel setulis (1–6 × 0.7–1 μ) divergentibus sed praecipue apicalibus ornatis,

hyalinis.—Hyphis latis, pseudoamyloideis.—Epicute pilei ex hyphis angustioribus haud gelatinosis elongatis efformata, pseudoamyloida, subtiliter diverticulata superficiem versus; dermatocystidiis nullis.—Ad corticem arboris dicotyledoneae gregatim sed haud caespitose, autumnalis. Typus: CHILE: Valdivia: 5 km septentrionem versus a Los Conales, 14–V–1967, Singer M 6909 (SGO).

MYCENA GALERICULATA (Scop. ex Fr.) S. F. Gray, Nat. Arr. Brit. pl. 1: 619. 1821.

A very common species in our region as well as in North America, Northern Asia and Europe, description see in Kühner, Encycl. Mycol. 10: 324–329. 1938. In our region, we have exclusively a bisporous race, but entirely white forms (var. *candicans* Velen.), and forms with white, gray, and pink lamellae have been collected.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 14–III–1963, Singer M 3538 (BAFC).—Arroyo Frutillas, 9–IV–1963, Singer M 3356 (BAFC).—Lago Correntoso, 9–IV–1963 (BAFC).—Near Puerto Manzano, 5–IV–1963, Singer M 3274 (BAFC).—CHILE: Malleco: Lonquimay, 1963, Rühm 7 a (BAFC).—Cautín: Near Pidenco, 25–IV–1967, Singer M 6540 a (SGO), var. *candicans*.—Also ample material from the northern hemisphere.

Mycena atroincrustata Sing. spec. nov.—Pileo subatro, per duas tertias partes radii pullucide striato, et sulculato, glabro, haud viscoso, canico-campanulato et subpapillato, usque ad 12 mm lato et 1 mm alto.—Lamellis griseis, ascendentibus, arcuato-adnatis, subdistantibus.—Stipite griseo, glabro, haud viscoso, subaequali vel leniter attenuato apicem versus, ± 35 mm longo et 1.5–3 mm lato.—Contexto inodoro.—Sporis 6.3–8.8 × 4.5–5.3 μ, ellipsoideis, levibus, amyloideis.—Hymenio e basidiis et paucis cystidiis efformato et cheilocystidiis marginato. Basidiis 26–31 × 8 μ, tetrasporis. Cystidiis filamentosis, inconspicuis, 25–27 × 3–3.5 μ, hyalinis; cheilocystidiis 20–33 × 6.5–15 μ, ventricosis, rarius clavatis, late rotundato-obtusis vel anguste breviterque mucronatis, frequenter uno, duobus, tribus vel quatuor appendicibus apicalibus, raro lateralibus ornatis, hyalinis; paucis basidiis in acie lamellarum intermixtis.—Hyphis latissimis, fibulatis, pseudoamyloideis, haud gelatinosis, hyalinis vel pigmento diluto intracellulari dissoluto fuscidulo impletis in tramate.—Epicute pilei cute repraesentata, haud gelatinisata, ex hyphis filamentosis irregulariter et intermittente diverticulatis vel levibus, sed pigmento atro-sepiaceo vel subatro fortiter incrustatis efformata.—Tegumento stipitis dermatocystidiis tantum formato; dermatocystidiis e strato corticali hypharum pigmentatarum (pigmento intracellulari, vix vel minutissime

hic inde incrustante) parallelarum natis, clavatis et (1)–4 appendiculis apicalibus erectis breviter digitaliformibus ornatis.—Ad humum et detritum silvestrem in silva nothofaginea pura (*N. dombeyi*), autumno. Typus: ARGENTINA: Neuquén, Lago Correntoso, 25–IV–1965, Singer M 3519a (BAFC).—Cum Hydropode lipocystide crescit et pigmento incrustante strati cuticularis insignis est.

Mycena pseudoalnicola Sing. spec. nov.—Pileo griseo, glabro, in vegetis subpruinato, haud viscoso, per medium radium pellucide striato, convexo-campanulato dein applanato et umbone humili, obtuso frequenter praedito, usque ad 16 mm lato.—Lamellis in vegetis et siccis griseis, subascendentibus dein horizontalibus, latis, ventricosis, subdistantibus, adnatis, dente subdecurrentibus.—Stipite griseo, ad apicem mox pallidiore, glabro, haud viscido, aequali, usque ad 26 mm longo et 1–1.5 mm lato; mycelio basali fibrilloso, albo.—Contexto inodoro vel odore iucundo debili.—Sporis 6.8–9.5 × 3.5–4.5 µ, ellipsoideis vel oblongis, levibus, hyalinis, amyloideis.—Hymenio e basidiis efformato et cheilocystidiis variabilibus marginato. Basidiis 27–28 × 8–9.5 µ, tetrasporis. Cystidiis nullis visis, possibiliter admodum raris. Cheilocystidiis polymorphicis (1) 40–48 × 7.5–8 µ, ampullaceis, apice longo 2.7–3.2 µ lato, (2) 25–39 × 4.5–11 µ, fusiformibus vel fusoideo-ventricosis nec ampullaceis, acutis vel obtusatis; typis primo et secundo in centro et stipitis apicem versus acieis lamellarum visis; prope margimen pilei typis aliis obviis, (3) 38–55 × 9.5–13.5 µ, fusoideis vel ventricosis, subacutis vel obtusatis, interdum constrictis, frequenter unilateraliter nodoso diverticulatis diverticulis vel appendicibus paucis, subirregularibus, lateralibus, (4) 15–35 × 7.2–13.5 µ, clavatis vel ventricosis vel vesiculosis, sterigmatoiditer anguste mucronatis vel uno, rarius duobus appendiculis apicalibus digitaliformibus ornatis, his interdum bifurcatis, 1.8–3.3 µ latis, (5) exiguis, subvesiculosis, setulis divergentibus obsitis, raris.—Hyphis latis, pseudoamyloideis, fibulatis, haud gelatinosis.—Epicute pilei tenui, hyphis paulum angustioribus eis hypodermii appressis haud gelatinosis efformata, diverticulatione superficiali forti ornata, diverticulis usque ad 9 µ projicientibus, filiformibus. Hypodermio cutem repraesentante, ex elementis brevibus, voluminosis, pigmento intracellulari spadiceo-fusco coloratis efformato.—Ad lignum *Austrocedri chilensis* in silva conifera. Typus: ARGENTINA: Rio Negro: Prope Santa María, 8–IV–1963, Singer M 3321 (BAFC).—Mycenae alnicolae affinis sed diverticulatione longiuscula, carpophoris paullum minoribus, cheilocystidiis admodum versiformibus, habitationeque differt. A *Mycena pseudovulgari* simili et in eadem vegetatione obvia differt absentia pelliculae gelatinosae in pileis et stipitibus.

Mycena paraboliciformis Sing. spec. nov.—Pileo atrofusco vel fusco-griseo, haud viscido, glabro, conico vel campanulato, obtuso vel acuto, striatulo-sulculato vel sulcato in maturis, interdum sublevi, 16–19 mm lato.—Lamellis griseis, aciem versus pallidioribus vel pallidis, mediocriter latis vel latis, ascendentibus, adnatis.—Stipite pileo subconcolori, apicem versus plerumque pallidiore, levi, 27–41 × 2.5–4.5 mm.—Contexto partim concolori, inodoro.—Sporis 9.7–11.8 × 5.8–7.3 μ, amyloideis, versiformibus, levibus.—Basidiis 30–40 × 10–13 μ, tetrasporis. Cystidiis ad acies et latera lamellarum, 35–50 × 9–17 μ, ventricosis et mucronatis vel uno vel pluribus appendiculis apicalibus (interdum lateralibus) digitiformibus vel sterigmatoideis obtusiusculis praeditis, rarius ampullaceis et tunc interdum simplicibus, his ad aciem frequentius visis.—Hyphis latis, fibuligeris, pseudoamyloideis, haud gelatinosis.—Epicute pilei cutem repraesentante, diverticulata (diverticulis numerosis et continuis vel interdum sparsis et intermittentibus, parvulis (1–1.3 μ), interdum corpusculis acanthophysoideis vesiculosis exiguis intermixtis, haud gelatinosa. Hypodermio ex elementis voluminosis, horizontaliter catenulatis, pigmento fusco intracellulari dissoluto repletis efformato. Strato subhypodermiali vel interdum toto tramate pilei item pigmentato.—Ad lignum combustum vel subustum nec non haud ustum, rarius ad terram in silvis. Typus (M 3992) in BAFC conservatus. ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 7–V–1964, Singer legit.

We have also studied material determined *M. parabolica* by A. H. Smith, (MICH), and additional South American material. This species has also been observed in Europe (see Favre, Bull. Neuch. Sc. Nat. 80: 86. 1957). But it is highly questionable whether the classical descriptions of *Agaricus parabolicus* really belong here as is recognized by all modern authors. We have therefore used the substitute name *Mycena paraboliciformis* Sing. for many years now, which is now being legalized by a Latin description.

MYCENA AUSTROCAPILLARIS Sing., Ark. f. Botanik 4: 391. 1959.
Description and illustrations see there.

MYCENA BROWNII A. H. Smith, North Amer. Spec. Mycena p. 363. 1947.

Description and illustration see there. Since our specimens agree with Smith's diagnosis and illustrations in all details (although the pileus is slightly larger in fully adult specimens and the spores measure only 7.3–10 × 5–6 μ), we do not describe our specimens separately: CHILE: Osorno: Lago Puyehue, 14–IX–1967, Singer M 7503, on dead trunk of *Aextoxicum* (SGO).—ARGENTINA: Rio Negro: Cerro Catedral, 29–IV–

1965, Singer M 5348 a, on pieces of dead wood of *Nothofagus pumilio* (BAFC).

MYCENA PSEUDOVULGARIS Kühner, Encycl. Mycol. 10: 393. 1938.

Pileus gray with paler margin, or dark sepia with grayish fuscous to pallid margin, glabrous, becoming sulculate, viscid, convex and umbonate to conical, 7.5–12 mm broad.—Lamellae grayish white or whitish, rather broad, to broad, medium close, decurrent, arcuate.—Stipe hyaline white to whitish, below often gray, viscid, equal, 22–55 × 1.5 mm; basal mycelium fibrillose, white.—Context inodorous.—Spores 6.5–9 × 2.5–3.8 μ, oblong to oblong-subcylindric, hyaline, smooth, strongly amyloid.—Basidia 17–19 × 4.5–6 μ, tetrasporous. Cheilocystidia (and similar pleurocystidia scattered near the edges) 28–42 × 3.5–11 μ, somewhat ventricose below or in the middle, or subventricose-ampullaceous, with a long narrow apical portion (1.5–3.5 μ broad) or two divergent apical "necks" (rarely so), these obtuse, rarely subacute, the upper portion often strongly incrusted by a melleous granular resinous mass, thin-walled, often long-pedicellate, not gelatinizing, inamyloid, numerous but intermixed with basidia, at times, although broader below, merely cylindracous in basal portion.—Hyphae of trama of thin (4–5 μ) to very broad (27 μ) and strongly pseudoamyloid, hyphae of hymenophoral trama weakly pseudoamyloid and regularly arranged, with clamp connections.—Epicutis of pileus and covering layer of stipe distinctly gelatinized (KOH) and loosely arranged, with diverticulations and ramifications in the uppermost layer (diverticula to 9 μ long). Hypodermium with fuscous intracellular dissolved pigment, some very short and very broad, not visibly gelatinized. The gelatinization of both pileus and stipe varies between weak and strong. —On not identified dead wood, once on dead wood buried in volcanic ashes, late summer and fall.

Material studied: ARGENTINA: Arroyo Frutillas, 28-IV–1964, Singer M 3605 A (BAFC).—Puerto Manzano, 8–IV–1963, Singer M 3331 (BAFC).—U.S.S.R., Far Eastern region, Khabarovsk. kr. Leg. Lyubarski, comm. Singer no. 726, September 1939 (LE), on *Larix* wood.

This species is undoubtedly very close to *M. laevigata* sensu Kühner (Smith's data reproduced there are actually identical with our fungus), but differs from the European species in more pigmented pileus and narrower spores. In my collections from Europe and Central Asia (Altai Mts.) I found spores 5.8–8.3 × 4–5.8 μ and even those indicated by J. Schäffer in Kühner, l.c. p. 496 are 3.7–4.5–(5) μ broad ! Fries himself indicates, just as does Lasch, white ("albo !") pileus. Unless more clearly intermediate forms are found in either North America or Europe, I shall

call our material by the name proposed by Kühner, even though Kühner himself (in Kühner & Romagnesi) appears to accept Smith's equation.

Mycena subulifera Sing. spec. nov.—Pileo albo, glabro, glutinoso, fortiter ut minime per medium radium pilei profunde sulcato vel frequenter ex toto sulcato umbilico excepto, convexo, umbilicato, interdum demum subapplanato, 10–20 mm lato.—Lamellis albis, moderatim confertis, sublatis, haud ventricosis, decurrentibus, interdum in adultis subdistantibus.—Stipite aureo-brunneo vel succineo (e.gr. "Antique gold"), gradatim albo apicem versus, glabro, levi, glutinoso, 15–30 × 0.8–2 mm.—Contexto albo, tenui, odore farinaceo-rancido et subpiscino.—Sporis 6.5–8.5 × 3–4 μ, oblongis, cylindraceis, ellipsoideis, levibus, hyalinis, amyloideis.—Hymenio: Basidiis 17–22 × 5–6.5 μ, tetrasporis. Cystidiis nullis. Cheilocystidiis fusoideis vel subulatis, apice ad punctum subacutum vel acutum fere attenuatis, levibus et integris, 32–45 × 3–8.8 μ.—Hyphis in tramate pilei et in tramate hymenophorali ex elementis valde voluminosis compositis, pseudoamyloideis, fibuligeris, haud gelatinisatis, sed in epicute pilei et in tegumento glutinoso stipitis stratum latum gelatinosum formantibus (ixocutem) et filamentosis (1–2 μ latis), hyalinis, externis plus minusve diverticulatis vel ramosis. Dermatocystidiis nullis.—Ad lignum (e.gr. Drimys) in silva. Typus (M 6809) in SGO conservatur.

Material studied: CHILE: Llanquihue: Peulla (not conserved).—Valdivia: 10 km north of Colaco, 9–V–1967, Singer M 6809 (SGO), typus.—Hueycolla (not conserved).

This species appears to be also close to *M. laevigata* and *M. pseudovulgaris* but differs in the strongly sulcate pileus and the color of the stipe which is constant and persistent, and, at least from *M. pseudovulgaris*, in the odor.

MYCENA INSIGNIS A. H. Smith, Contrib. Univ. Mich. Herb. 5: 25. 1941.

Although our specimen has slightly broader spores (6–7.5–(8) × 3.7–4–(4.5) μ) and grew on *Chusquea* rather than conifer needles, it agrees otherwise well with the original description of this North American species. If, because of the differences indicated, our collection should not be conspecific with *M. insignis*, one would have to consider the possibility that our material is nothing but a small retarded and rain-washed form of the preceding species although the characteristic deep sulcation of the latter is missing here, and the cheilocystidia are like those illustrated by Smith.

Mycena omniumsanctorum Sing. spec. nov.—Pileo albo, sulcato, glabro, umbilico sat profundo constanter, ut minime in adultis, praedito, ceterum campanulato-convexo, 4–5 mm lato, 3–4 mm alto.—Lamellis albis, angustis, subdistantibus, in parte anteriore ascendentibus, in parte posteriore arcuato-decurrentibus.—Stipite albo, haud glutinoso, glabro, 14–18 × 0.9–1 mm; mycelio basali fibrillis stellatim radiantibus inconspicuis albis ad basin subdilatatam adhaesis constante.—Contexto albo, tenui, inodoro. —Sporis 5.5–8 × 3.3–4.8 μ, magnitudine et forma admodum variabilibus, ellipsoideis vel oblongis, plerumque (at haud semper) partim vel ex integro amyloideis, hyalinis in NH_4OH, levibus.—Hymenio: Basidiis 17.5 × 5 μ, tetrasporis.Cystidiis admodum raris vel sparsis, cheilocystidiis simillimis; cheilocystidiis inter basidia numerosis, 18–26 × 6–11 μ, versiformibus, fusiformibus vel ventricosis vel subampullaceis, rarius claviformibus, levibus et integris, hyalinis, ad apicem interdum massa glutinosa vel resinacea incrustatis.—Hyphis in tramate hymenophorali haud gelatinoso, vix vel non pseudoamyloideo, filamentosis sed nonnullis voluminosis intermixtis, regulariter dispositis. Hyphis in strato superiore pilei manifeste gelatinoso laxe dispositis, filamentosis, haud pseudoamyloideis, fibulatis. Hyphis stipitis haud fortiter sed manifeste pseudoamyloideis, parallelis.—Epicute pilei ex hyphis hyalinis, filamentosis, repentibus efformata quae ramos breves diverticuliformes superficiem versus oblique ascendentes emittunt; sub epicute hyphis oleiferis numerosis.—Tegumento stipitis subnullo, haud gelatinoso; dermatocystidiis nullis.—Ad lignum putridum in silva. Typus: CHILE: Llanquihue: Peulla, 20–III–1959, Singer M 1924 (SGO), typus. Nomen specificum a Lago Todos los Santos ad cuius ripam vegetat.

Mycena helminthobasis Sing. spec. nov.—Pileo griseo vel fuligineo ("bark" M & P) in centro, marginem versus pallidiore vel pallido, vel toto fuligineo vel fusco ("bracken", "brown sugar"), glabro, convexo, umbilicato vel centro depresso, aetate frequenter brunneo ("pecan" br. M & P) maculato, viscido vel subviscido, usque ad 4/5 partes radii sulcato, 15–32 mm lato.—Lamellis albis vel griseis, ad aciem subviscidam, integram nec non in zona ei propinqua constanter albis, venis transversalibus anastomosantibus vel haud anastomosantibus, sed, si simplices sunt, lamellulis nonnullis ubi terminant furcatis venis continuis, arcuatis vel ventricosis, adultis perfecte horizontalibus, subconfertis vel subdistantibus in vetustis interdum brunneo-maculatis, latiusculis, adnexis vel adnatis, rarius inaequaliter subdecurrentibus, aliis adnatis.—Stipite toto vel apice et medio albo, basin versus griseo vel sordide grisello, vel sordide fusco ("bronze" vel "partridge" M & P ed. prima), demum apice concolori basi, vel toto stipite fuligineo-brunneo, haud viscido, glabro, frequenter nitidiusculo, levi, in vetustis rarius brunneo-maculato ("pecan br." M & P),

exsiccatione frequenter sordide flavescente vel sordide grisente, aequali, plerumque basin versus curvato, vermiformiterve flexuoso, rarius recto, 69–140 × 1.5–3 mm, mycelio basali sordide albido, fibrilloso.—Contexto toto vel partim albo, immutabili, inodoro,—Sporis 7.7–10 × 4.5–5.5 μ, plerumque 6–8 × 5–5.5 μ, ellipsoideis rarius breviter ellipsoideis, levibus, hyalinis, amyloideis.—Hymenio e basidiis tantum composito et cheilocystidiis marginato. Basidiis 24–33 × (5)–6.5–9 μ, clavatis vel rarius medio-constrictis, tetrasporis. Cystidiis nullis; cheilocystidiis 10–35 × 4–12 μ in corpore basali cylindraceo vel clavato et integro ad apicem tantum paucis vel compluribus appendicibus simplicibus vel bifurcatis suberectis vel saepe divergentibus ornato aut, in nonnullis, clavariiformiter lateraliter ramoso-diverticulato (diverticulis 1.5–17 × 1–2 μ), hyalinis, tenui-tunicatis, gelatinisantibus; acie lamellarum subviscosa, heteromorpha.—Hyphis fibuligeris, in zonis gelatinosis vix vel leniter pseudoamyloideis, ceterum fortiter pseudoamyloideis, ibique ex elementis voluminosis, sed in partibus gelatinosis filamentosis vel angustioribus, tramate hymenophorali regulari, haud gelatinoso et late-hyphali in parte superiore, in parte acie vicinali multis hyphis angustioribus intermixtis et paucis latis (± 15 μ), tramate in zonam supralamellarem transeunte; supra zonam supralamellarem pilei zona inferiore gelatinosa instructa (e.gr. 75–85 μ diam.); tramate haud gelatinosa supra zonam inferiorem gelatinosam cum hypodermio confluente, pigmento intracellulari fusco dissoluto in cellulis voluminosis catenulas horizontales formantibus, raro pigmento membranali hic inde praesente; rarius partim pigmento in parte superiore (hypodermio) localisato vel absente.—Epicute pilei fortiter gelatinosa, ex hyphis 1–2.5 μ latis filiformibus hyalinis, admodum laxe dispositis, et horizontalibus efformata; strato epicuticulari crassitie el hypodermii, i.e. plus minusve 60–70 μ; hyphis superficieis et strati epicuticularis adiacentis interdum oblique diverticulatis diverticulis usque ad 7 × 1 μ, sed aliis in individuis hyphis omnibus epicuticularibus integris et levibus.—Stipite tegumenti carente, sine zona gelatinosa superficiali supra hyphas tramatis parallelas densas.—Ad lignum putridum in silvis, gregatim haud fusciculariter crescens. Majalis. Typus (M 6760) in SGO conservatus est.

Material studied: CHILE: Valdivia: Cordillera Pelada, east slope, "Chivería", 7–V–1967, Singer M 6760 (SGO), typus.—M 6757 (SGO).—Cordillera Pelada, west slope, 450 m, 7–V–1965, Singer M 5583 (BAFC).—Hueycolla, 1/4–V–1967, Singer M 6575 (SGO).

This species, characteristic because of its habit and viscid pileus, and because of the two isolated gelatinous layers of the pileus and dry stipe, has been found frequently in the Coastal Cordillera where it probably accompanies *Saxegothaea*.

MYCENA FERNANDEZIANA Sing., Ark. f. Botanik 4: 392. 1959. Var. *fernandeziana.*
Description see there.

Var. **osornoana** Sing. var. nov.—A varietate *fernandeziana* differt sporis juvenilibus tantum subglobosis, maturis 5.5–6.5 × 3–3.8 μ. Lamellis griseis. —Ad lignum putridum in silva anectotrophica solitario. Typus: CHILE: Osorno: Lago Puyehue, 14–X–1967, Singer M 7526 (SGO).

MYCENA ALGERIENSIS R. Maire in Kühner, Encycl. Mycol. 10: 685. 1938.

Var. **hypoxera** Sing. var. nov.—Pileo fuligineo, glutinoso, glabro, breviter striato, subconico-campanulato, plus minusve abtuse vel acute papillato, 11–19 mm lato, 13–15 mm alto.—Lamellis griseis, subconfertis vel subdistantibus, mediocriter latis vel satis angustis, latioribus in tertia parte exteriore, haud anastomosantibus vel intervenosis, ascendentibus, adnatis vel dente decurrentibus.—Stipite griseo, admodum subtiliter pruinosulo, haud viscido, cavo-tubuloso, apicem versus leniter attenuato, 25–36 × 2.5–5 mm (ad basin), × 2–3 mm ad apicem; mycelio basali praesente.—Contexto interiore algo, inodoro.—Sporis 4.5—7.5 × 3.8–7 μ, admodum variabilibus, globosis vel breviter ellipsoidei-cylindraceis vel oblongis, juvenilibus plerumque globosis, dein plerumque ellipsoideis, levibus, amyloideis.—Basidiis 30–40 × 8–9 μ, tetrasporis. Cystidiis et cheilocystidiis aequalibus, ad aciem densissimis, ad latera sparsis, 15–38 × 4–8 μ, clavatis vel claviculatis et subventricosis, nonnullis rarius centro constrictis, obtusis, hyalinis, inamyloideis.—Hyphis fibulatis, tarde pseudoamyloideis, in nonnullis granulatione subamylacea (subatra) praesente; tramate hymenophorali ex hyphis usque ad 13 μ latis efformato, hyalino, haud gelatinisato, regulari.—Epicute pilei pellicula fortiter gelatinosa, hyalina, ex hyphis levibus, laxe dispositis filamentosis efformata. Hypodermio ex elementis voluminosis haud gelatinosis pigmento intracellulari dissoluto impletis efformato.—Ad lignum putridissimum ad basin Eucryphiae in silva, gregatim sed haud caespitoso-fasciculariter crescentes; majalis. Typus: CHILE: Cordillera Pelada, 450 m alt., 7–V–1965, Singer M 5593 (BAFC).

Var. **peraffinis** Sing. var. nov.—Pileo spadiceo-brunneo, margine fusco ("teakwood"), centro subfuligineo, subviscido, glabro, convexo, subumbonato vel late obtuseque umbonato, per medium radium fortiter sulcato, 29–39 mm lato.—Lamellis pallide grisellis, haud intervenosis, subventricosis, mox horizontalibus, anguste adnexis sed dente sub-

decurrente plerumque munitis, satis angustis.—Stipite albo in apice, gradatim magis griseo basin atrogriseam versus, haud viscido, levi, glabro, haud radicante, apicem versus attenuato vel subaequali, 32–98 × 3–6 mm; mycelio basali fibrilloso, albo.—Sporis 8.5–10 × 5.5–6 μ, ellipsoideis, levibus, amyloideis.—Basidiis 23–30 × 8 μ, tetrasporis. Cystidiis et cheilocystidiis aequalibus, ad aciem densissimis, ad latera sparsis, 50–83 × 10–12.5 μ, ventricosis, rarius subcylindraceis, ad apicem leniter attenuatis vel in medio vel prope medium leniter constrictis, interdum manifeste ampullaceis apice cylindraceis 3–8 μ latis et obtusis (sic ad acies frequenter !), hyalinis, tenui-tunicatis.—Hyphis (epicute excepta) ex elementis brevibus et crassis efformatis, fortiter pseudoamyloideis, in zona subhypodermiali plerumque fusco-pigmentatis ita ut hypodermium, fibuligeris.—Epicute pilei ixocutem repraesentante, 30–40 μ crassa, hyphis filamentosis, laxe dispositis, levibus.—Ad lignum putridissimum in silva mixta, majalis. Typus: CHILE: Valdivia: Cordillera Pelada, east slope, Chivería, 7–V–1967, Singer M 6781 (SGO).

The North African *M. algeriensis* var. *algeriensis* coincides very well with both our varieties excepting the lenght of the cystidia which is considerably less in var. *hypoxera*, and the nitric odor which is wanting in both our varieties. We are convinced that these South American collections are conspecific with the African type, perhaps geographical races. On the other hand, the manner of growth habit—densely fasciculate in the type form—is never observed in Chile.

Hydropus

Hydropus pyxidatoides Sing. spec.—Pileo fulvo-brunneolo vel fulvo-ochraceo, leniter breviter pellucide striato, subsericello in juvenilibus, mox glabrescente, convexo et umbilicato dein concavo, ± 12–14 mm lato.—Lamellis albis, in tertia parte marginali subdistantibus, stipitem versus subconfertis, arcuatis, demum descendentibus, didymis, haud anastomosantibus, satis angustis, decurrentibus.—Stipite albido, dein alutaeo-albido, subtiliter pubescente ut minime sub lente, aequali, 11–19 × 0.8–2 mm.—Contexto inodoro.—Sporis 5.5–6 × 2—2.5 μ, cylindraceis, hyalinis, levibus, inamyloideis.—Hymenio basidiis et cystidiis consistente. Basidiis 15–16.8 × 4–4.5 μ, tetrasporis. Cystidiis numerosis, 39–64 × 6.5–12.5 μ, ampullaceis, apice cylindraceo vel attenuato gaudentibus, obtusis, rarius subacutis, numquam acutis, hyalinis, tenui-tunicatis vel subopacis (e membrana interna haud manifeste delimitata), haud muricatis.—Hyphis fibulatis, inamyloideis ve vix pseudoamyloideis, in tramate hymenophorali regulariter dispositis.—Epicute e fasciculis isolatis dermato-

cystidiorum efformata; dermatocystidiis typi cystidiorum hymenialium aut vesiculosis vel vesiculoso-elongatis, pigmento dissoluto pallide fuscidulo impletis vel hyalinis, variabilibus, e.gr. 40 × 7 μ.—Dermatocystidiis stipitis eis pilei simillimis sed frequenter maioribus.—Ad terram inter muscos in declivibus subapricis. Typus: CHILE: Valdivia: Cordillera Pelada, 400 m alt., inter Polytricha, 7–V–1965, Singer M 5596 (BAFC).—Colore insignis species Omphalinam pyxidatam in mentem revocat.

Hydropus lipocystis Sing. spec. nov.—Pileo fusco-griseo, griseo, cinereo (e.gr. "acorn" M & P), ad marginem saepe pallidiore, levi vel usque ad 4/5 radii pellucide striato, glabro, haud viscido vel vix subviscido, forma variabili, primum campanulato vel convexo, rarius subconico, dein convexo vel applanato, centro umbilicato vel depresso, aut umbonato umbone lato et obtuso, raro (in forma bispora, vide notam specialem !), papillato, 5–24 mm lato.—Lamellis albis vel albidis, sed primum frequenter pallide cinereis, confertis vel distantibus, primum subascendentibus, mox subhorizontalibus vel horizontalibus, dein frequenter arcuatis, sed in parte externa frequenter ventricosis, satis angustis vel latis, leniter intervenosis vel haud anastomosantibus, rotundato-subliberis, rotundato-subadnatis, adnatis vel decurrentibus, aut dente decurrentibus, interdum sinuatis.—Stipite ex toto pallide cinerero fusco vel griseo, interdum ex toto albo vel in parte apicali tantum albo, in parte apicali vel ex toto pruinato-pubescente, haud viscido, levi, aequali, 17–35 × 1–2 mm; mycelio basali fibrilloso, albo.—Contexto inodoro.—Sporis 5–9.5 × (2.2)–2.5–4 μ, cylindraceis vel oblongis, interdum suballantoideis, levibus, hyalinis, amyloideis.—Hymenio e basidiis et cystidiis consistente. Basidiis 18–28 × 4.8–7.3 μ, aut omnibus tetrasporis, aut (2)–(3)–4-sporis aut (in forma *bispora*) omnibus bisporis. Cystidiis pseudocystidioideis quod omnia vel permulta contentu protoplasmoideo vel guttulato repleta sunt et in hoc caso gloeocystidia in mentem revocant, sed neque in solutinibus phloxinicis neque cresyl-azureis fortiter colorantur, in aciebus et lateribus lamellarum numerosis, 30–113 × 9–20 μ, membrana simplici tenuique vel duplicata et subincrassata (usque ad 1 μ crassa), inamyloideis, ampullaceis vel ventricosis vel subclavatis, in KOH parietibus frequentius incrassatis et contentu magis visibili quam in aqua aut NH_4OH, membranis levibus et azurei cresylici ope haud metachromaticis, in ampullaceis apice 5.3–9 μ latis et rotundato-obtusis.—Hyphis in pileo vix, in stipite tarde debiliterque pseudoamyloideis, haud gelatinisatis, in stipite metachromaticis (lilaceo-vinaceis) in azureo cresylico, fibulatis, in tramate pilei et hymenophori plerumque latis (usque ad 30 μ), sed filamentosis etiam observatis. Hyphis oleiferis in tramate stipitis paucis vel nullis praesentibus.–Epicute pilei e dermatocystidiis admodum sparsis cystidiis hymenialibus

similibus sed brevioribus vel mucronatis, interdum contentu unformi et pigmento dilute fuscidulo repletis, fugacibus efformato; dermatocystidiis e strato epicuticulari inferiore (ex hyphis hyalinis vel partim dilutissime fuscidulis filamentosis (1.5–4 μ diam.) repentibus haud vel vix gelatinosis, levibus vel raro paucis diverticulis distantibus humilibus ornatis efformato) natis; hyphis hypodermii latioribus (e.gr. 16–20 μ), in strato inferiore pigmento dissoluto fuscidulo impletis.—Ad apicem vel interdum per totam superficiem stipitis dermatocystidiis eis hymenii simillimis.—Ad terram inter folia vel ad folia delapsa putrescentia, raro (f. *bispora* !) ad lignum putridum in silvis. Typus (M 3349) in BAFC conservatus est.

Material studied: ARGENTINA: Neuquén: Lago Correntoso, on leaves of *Nothofagus dombeyi,* 25–IV–1965, Singer M 3519 (BAFC).—16–IV–1965, M 5001 (BAFC).—Arroyo Frutillas, on leaves of *Nothofagus antarctica,* 9–IV–1963, Singer M 3349 (BAFC), typus.—28–IV–1964, Singer M 3636 (BAFC).—Above Puerto Manzano, "Cerro Cortinario", here on leaves of *Nothofagus pumilio,* 26–IV–1963 (BAFC).—24–IV–1964 (specimen lost).—Rio Negro: Lago Nahuel Huapí, near Santa María, on *Austrocedrus chilensis* wood, 30–IV–1964, Singer M 3705 (BAFC), bisporous !—Camino de Laguna Frías al Paso de las Nubes, 16–III–1959, Singer M 1851 (BAFC).—21–III–1963, Singer M 3124 (SGO).

No. M 3705 is the only bisporous form of this species, and differs in several other regards from the four-spored and mixed forms:

Var. **bispora** Sing. var. nov.—Pileo campanulato, papilla acuta ornato, haud umbilicato neque obtuso, 7 mm lato, 4.5 mm alto.—Basidiis bisporis. —Ad lignum putridum *Austrocedri chilensis* in silva pura huius coniferae obvius. Typus (M 3705) in BAFC conservatur.

Hydropus microsporus Sing. spec. nov.—Pileo atro-plumbeo-griseo vel fuligineo-griseo, in siccis etiam atrogriseo, sed margine initio albido, glabro, haud viscido, in vegetis per tertiam partem radii pellucide striato, convexo, umbone obtuso vel umbilico haud profundo instituto, 14–20 mm lato.—Lamellis dilute cinereis, dein griseis, in siccis etiam griseis, subconfertis vel subdistantibus, in adultis saepe acie undulatis, vix ascendentibus margine pilei versus, sed subhorizontalibus vel horizontalibus vel arcuatis et adnatis dente decurrente, dein adnatis, satis angustis.—Stipite primum toto griseo, dein subsordide grisello basin et subalbido apicem versus, glabro vel minutissime subfibrilloso scabriusculo, subtiliter pruinato ad apicem, glabrescente, anguste cavo, aequali, 32–36 × 1.5–4 mm; mycelio basali albo.—Contexto brunneolo-griseo in zona superiore, inodoro, latice absente.—Sporis 5–6 × 2.5–3 μ, oblongis vel subcylindraceis, levibus, hyalinis, manifeste amyloideis.—Hymenio basidiis formato et cheilo-

cystidiis sparse marginato. Basidiis 23–27 × 5–5.5 μ, tetrasporis. Cystidiis nullis; cheilocystidiis sparsis inter basidia et basidiola, 20–22 × 7.5–10.5 μ, vesiculoso-clavatis, nonnullis mucronatis, tenui-tunicatis.—Hyphis pseudoamyloideis, fibulatis.—Epicute pilei ex hyphis filamentosis stratum tenue efformantibus, hyalinis vel pigmento fuscidulo intracellulari dissoluto repletis, totis levibus consistente; hic inde dermatocystidiis vel elementis terminalibus hypodermii epicutem perrumpentibus exiguis (e.gr. 16 × 9.5 μ) subclavatis, pigmento fuscidulo dissoluto repletis visis. Hypodermio sub forma cutis ex elementibus sat voluminosis pigmento dissoluto repletis, (e.gr. 51 × 22 μ) efformato.—Ad truncum emortuum (*Nothofagi dombeyi* ?) manifeste fasciculatim, autumnalis. Typus: ARGENTINA: Neuquén: Lago Correntoso, 16–IV–1965, Singer M 5011 (BAFC).

Hydropus dusenii (Bres.) Sing. comb. nov.

Panus dusenii Bres., Overs. Kongl. Vet.-Akad. Förhandl. 1900 (2): 312. 1900.
Fayodia dusenii (Bres.) Sing., Sydowia 6: 218. 1952.
Clitocybula dusenii (Bres.) Sing., Sydowia 15: 53. 1961.

A description of this as well as of f. *griseolamellata* see Sydowia 6: 218, 1952 under *Fayodia.*

Hydropus gerronematoides Sing. spec. nov.—Pileo sordide grisello-pallido et fuligineo punctata et radiatem lineato fibrillis innatis, dein punctationibus atris minus conspicuis, haud hygrophano nec viscoso, leniter breviter sulcato dein usque ad medium radium striatulo-sulcatulo, infundibuliformi, 32–58 mm lato.—Lamellis albis, intervenosis in adultis, satis angustis, confertis, descendentibus, decurrentibus, in vetustis subdistantibus vel distantibus.—Stipite albo vel sordide albido, glabro, subaequali, 30–60 × 4–6 mm.—Contexto albo, inodoro.—Sporis 8.5–11 × 6–6.2–(7) μ, ellipsoideis, levibus, amyloideis.—Hymenio basidiis formato et cheilocystidiis marginato. Basidiis 31–32 × 7.5–9 μ, tetrasporis. Cheilocystidiis ad aciem sat numerosis vel prope aciem interdum obviis, 25–60 × 10–20 μ, ventricosis vel ventricoso-mucronatis, rotundato-obtusis, hyalinis.—Hyphis fibulatis, inamyloideis, in tramate pilei et hymenophorali hyalinis, in hoc regulariter (interdum subtypi Clitocybarum modo) dispositis.—Epicute pilei tenui, ex hyphis filamentosis et ex eis ascendentibus dermatocystidiis formata; dermatocystidiis cheilocystidiis similibus sed succo fuscidulo frequenter impletis (aliis hyalinis).—Ad lignum putridum in silva anectotrophica, praecipue ad lignum Aextoxici. Typus: CHILE: Valdivia: Hueycolla, 50 m alt., 1/4–V–1967, Singer M 6688 (SGO), typus.

HYDROPUS FRATER-NIGER Sing., Mycol. 38: 227. 1946.

Description see there.

Hydropus funebris (Speg.) Sing. comb. nov.

Agaricus funebris Speg., Bo. Acad. Nac. Cienc. Cordoba 11: 9. 1887.
Mycena funebris (Speg.) Sacc., Syll. Fung. 9: 39. 1891.
Mycenella funebris Sing., Sydowia 6: 213. 1952.

Description see Darwiniana 13: 170. 1964.

Hydropus glabripes Sing. spec. nov.—Pileo griseo (7–A–9 Maerz & Paul) in centro, fusco ("Chukker br." M & P) marginem versus subrimose-fibrillose radiatim lineato, demum breviter sulculato, haud viscoso, vix hygrophano, convexo, centro profunde depresso vel umbilicato et hic sub lente nigro-fibrilloso, 12–14 mm lato.—Lamellis albis, arcuatis, decurrentibus, subdistantibus satis angustis vel moderate latis, haud intervenosis. —Stipite in parte superiore albo, in parte inferiore griseo, aequali vel basi subincrassato, haud insiticio sed basi paullum mycelioide, solido vel farcto, nato e maculis albis mycelii superficialis in substrato, glabro, 28–45 × 1.5 mm. Carne alba, inodora.—Sporis 7.5–10 × 4.8–6.2 μ plerumque 8 × 5.5 μ cc., membrana levi et homogenea, inamyloidea et guttula voluminosa interna (quae interdum deest) ornatis, breviter ellipsoideis.—Hymenio e basidiis et cystidiis efformato, basidiis 28–33 × 7–9 μ, tetrasporis; cystidiis sparsis, trama pilei versus frequenter subnullis, inconspicuis, basidiomorphis, optice vacuis, membrana tenui sed firma instructis, haud incrustatis vel rarius incrustatione tenuissima resinosa subhyalina instructis, ventricosis vel cylindraceis, vel subclavatis, interdum submucronatis vel lenissime subcapitato-subclaviformibus et apicem, integris et levibus, plerumque hyalinis, 26–37 × 5.5–8 μ.—Hyphis ± intertextis in tramate pilei, hyalinis, inamyloideis, fibulatis; tramate hymenophorali regulari, fortiter intertexto, hyphis tenui vel subcrassitunicatis, in mediostrato nonnullis inflatis usque ad 18 μ.—Epicute pilei haud continua, e dermatocystidiis 15–30 × 6–10 μ, ventricosis, vel late clavatis, plerumque pigmento dissoluto intracellulari fusco repletis, repentibus vel ascendentibus vel erectis, late rotundatis in apice, e strato tenui hypharum repentium, hyalinarum (paucarum fuscarum) filamentosarum (± 3 μ crassarum) natis; hypodermio hyalino, cute constituto, ex hyphis 6–10 μ crassis, subcrassitunicatis vel crassitunicatis efformato (membranis ± 1 μ crassis).—Ad ramulum ligneum emortuum in silva Myrtaceis dominata, inundabili, humida; typus (SGO) a R. Singer et W. Lazo lectus prope Quintero, provinciae Valparaíso, Chile, 27–VI–1967, n. M 7011/QUI-5.

HYDROPUS FLOCCIPES (Fr.) Sing., Sydowia 15: 66. 1961.

A good description of this species see A. H. Smith, North Amer. Spec. Mycena p. 380, 1947, with synonymy and illustrations (as *Mycena*

floccipes). Our Chilean material: Viña del Mar, prov. Valparaiso, 30–VII–1967, leg. W. Lazo, no. VI–59 (SGO).

Hydropus viscidulus Sing. spec. nov.—Pileo fusco ("Madrid" M & P), per 4/5 radii pellucide striato et sulcatulo, in juvenilibus integro, in vetustis siccis sub lente sparse et leniter radiatim rimoso, in nonnullis haud manifeste innate radiatim fibrilloso-lineato, ceterum graberrimo, viscido, subcampanulato, dein convexo, neque umbonato neque umbilicato, 12–17 mm lato.—Lamellis cinereis, subconfertis, vel subdistantibus, mediocriter vel sat latis, adnexis.—Stipite ad apicem albo, ad basin griseo, glabro et nudo, haud viscido, subaequali vel aequali, 26–27 × 2–2.2 mm; mycelio basali fibrilloso, albo, sparso.—Contexto inodoro.—Sporis 8.5–10.8 × 5.5–7 μ, ellipsoideis vel breviter ellipsoideis, levibus, tenui- et homogeneo-tunicatis, hyalinis in KOH, corpusculo amorpho oleaginoso interno vel guttulis compluribus repletis, amyloideis.—Hymenio basidiis (cystidiisque perpaucis vel nullis, inconspicuis) formato et nonnullis cheilocystidiis marginato. Basidiis 24–33 × 8–8.8 μ, (2)–4-sporis, Cheilocystidiis ± 30 × 2–3 μ, filamentosis, flexuosis vel curvatis vel rectis, inconspicuis.—Hyphis inamyloideis, fibulatis, tramate hymenophorali regulari ex elementis voluminosis pallide fuscudulis, non gelatinosis efformato; hymenopodio gelatinoso, ex hyphis distantibus, tenuibus, hyalinis.—Epicute pilei ex hyphis repentibus, admodum laxe dispositis, 0.5–1.5 μ tantum diametri, hyalinis vel (rarius) pallide fusciculis pigmenti dissoluti intracellularis causa, levibus, efformata, tenui, manifeste gelatinosa.—Tegumento stipitis subnullo, pilis conspicuis, dermatocystidiis, strato gelatinoso, hyphis differentiatis nullis.—Ad lignum putrescens in silva anectotrophica, autumnalis. Typus: CHILE: Valdivia: Hueycolla, 4–V–1967, Singer M 6703 (SGO).

Aside from the structure of the epicutis which is an ixocutis—unique, thus far in this group of species—,this species seems to be close to *H. dusenii* which, nevertheless, is more omphalioid in habit, and was found, thus far, only in Tierra del Fuego.

Dermoloma

DERMOLOMA JOSSERANDII Dennis & Orton, Brit. Myc. Soc. Trans. 43: 226. 1960.

Description see Josserend, Bull. Soc. Mycol. Fr. 74: 486. 1943 (as *Tricholoma hygrophorus* Joss.) and l.c. (Dennis & Orton).

Our Chilean material may well be a slightly variant form with narrower spores: 6–9 × 3–4.8 μ, cylindric to ellipsoid, smooth, hyaline, amyloid. CHILE: Colchagua: Pumanque, 7–VIII–1967, W. Lazo PU-130 (SGO).

Fayodia tenuisperma Sing. spec. nov.—Pileo atrogriseo, subtiliter pruinosulo dein glabrescente, centro interdum subruguloso et margine leniter minus obscuro, haud viscido, 3–5 mm lato, 2 mm alto.—Lamellis grisellis, exsiccatis sub lente ad acies submelleis, mediocriter latis vel latis, primum ascendentibus, dein (mox) horizontalibus, haud anastomosantibus, confertis vel subconfertis, adnexis vel adnatis.—Stipite atrogriseo, glabro in parte inferiore, sublubrico ibi, ad apicem pruinoso, filamentoso, haud insiticio, 30–50 × 0.5 mm.—Contexto inodoro.—Sporis 6.7–8 × 3–3.5 μ, oblongis, ad latus interius saepe applanatis, hyalinis vel demum pallide stramineis (NH_4OH), membrana complexa homo- vel heterogenea instructis, debiliter (in permultis maturis) spinulis brevissimis vel columnis minutissimis saepe dilatatis in membrana immersis et exo- vel perisporio amyloideo instructis, ceterum vix vel lenissime amyloideis, levibus, strato amyloideo interdum discontinuo, sed subamylaceo.—Hymenio basidiis formato et cheilocystidiis marginato. Basidiis 15–19 × 4–5 μ, tetrasporis, clavatis, hyalinis. Cystidiis nullis. Cheilocystidiis 28.5–60 × 4–11 μ, subulato-subampullaceis, apice filamentosis vel ut minime fortiter angustatis (1.5–3.2 μ, raro usque ad 4.5 μ diam.) obtusis, raro subacutis, incrustatione apicali resinosa amorpha mellea tectis, membrana 0.3–0.7 μ diam.—Hyphis fibulatis, haud gelatinosis, inamyloideis, in tramate hymenophorali regulari hyalinis, versiformibus, nonnullis membrana tenui, aliis 0.3–0.7 μ crassa (firma) instructis.—Epicute pilei ex hyphis elongatis (1–6 μ crassis), diverticulatis (diverticulis 1–5 × 0.5–1.5 μ, obtusis), hyalinis vel subhyalinis, haud gelatinosis efformata; hypodermio ex elementis prostratis voluminosis (e.gr. 27 × 18 μ, intus pigmentatis.—Tegumento stipitis in parte apicali dense dermatocystidiis obsito, dermatocystidiis cheilocystidiis simillimis, in parte inferiore stipitis sparsis vel raris, strato gelatinoso nullo.—Ad particula lignea immersa in terra arenosa, caespitose. Typus: ARGENTINA: Neuquén: Arroyo Frutillas, 28–IV–1965, Singer M 3620 (BAFC).

Fayodia striatula (Kühner) Sing. comb. nov.

Rhodocybe striatula Kühner, Bull. Soc. Linn. Lyon 7: 139. 1928.

Omphalia striatula (Kühner) Kühner & Romagnesi, Fl. Anat. Champ. Sup. p. 127, 1953.

Clitocybe striatula (Kühner) Orton, in Dennis, Orten & Hora, Suppl. Trans. Brit. Myc. Soc. (New Check List) p. 28, 1960.

Mycena cineraria A. H. Smith, North Amer. Spec. Mycena p. 450, 1947.

Description of the collections of our region:

Pileus cream gray (12–G–6, M & P), dirty gray or pale sordid in the center, concolorous or whitish on the margin, hygrophanous, fades to

whitish, but sometimes maintaining the grayish to dirty grayish center, one half to two thirds of radius transparently striate, when wet, and sometimes concentrically shallowly furrowed, sligthly radially sulculate in most caps when faded, slightly lubricous when mature and wet, but not normally glutinous, convex, with umbilicate center, 7–36 mm broad.—Lamellae white, then whitish pallid, dried assuming a somewhat dull flesh tinge in many specimens, broad (about 3.5 mm in the larger specimens), not anastomosing, but lamellulae sometimes crisp, often with somewhat uneven edge, not arcuate, subclose to subdistant, adnate to subdecurrent.—Stipe concolorous with pileus but at maturity generally with white to sordid whitish apex, glabrous but apex at first white pruinate-flocculose, equal, sometimes slightly tapering downwards or upwards, or narrowly subfusoid, not glutinous, 15–39 × 1–3.5 mm.— Context in wet condition often glassy grayish all through, but fading white or whitish, or whitish at all times, inodorous.—Spores 5.5–8 × 3–4.5 μ, ellipsoid, sometimes ovoid, appearing smooth but wall with imbedded small spinules or columns which are not distinct in all spores (oil immersion lens), but undoubtedly make the wall heterogenous and the spores appearing finely punctulate when seen from above, the walls rather firm, hyaline, inamyloid.—Hymenium: Basidia 19–28.5 × 6–8.2 μ, all 4-spored, or few 2-spored intermixed. Cystidia on both edges and sides present, scattered but rather numerous, more rarely not numerous, not even at the edge, 28–55 × 7–10.3 μ, basically subcylindric, but sometimes slightly claviform or constricted underneath a thickened apex, or slightly more ventricose and thus broader below, thin-walled, with obtuse tip, inamyloid. —Hyphae not gelatinized excepting at times the epicutis of the pileus and thin-walled, inamyloid, with clamp connections, more or less filamentous and narrow; hymenophoral trama hyaline, regular.—Epicutis of pileus and hypodermium both in form of a cutis, the epicutis eventually more or less gelatinizing and becoming an ixocutis, hyaline, with smooth filamentous (up to 5 μ thick) thin-walled hyphae, the terminal cells strongly elongated with rounded ends, no diverticulation at all; hypodermium consisting of pale vinaceous-fuscidulous or fuscidulous to hyaline rather narrow hyphae, not much differentiated from the epicutis except by lack of gelatinization and presence of intracellular pigment (dissolved and rather dilute).—Covering of stipe, practically none, dermatocystidia at the very apex present, like those of hymenium.—On leaves of *Austrocedrus, Fitzroya,* rarely on *Lomatia,* or on the humus in coniferous or mixed woods, fruiting in fall.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 22–IV–1964, Singer M 3396 (BAFC).—8–IV–1963, Singer M 3323 (BAFC).—

Rio Negro: Camino de Laguna Frías al Paso de las Nubes, 24–III–1963, Singer M 3177 A (BAFC).

Xeromphalina

XEROMPHALINA AUSTROANDINA Sing., Bol. Soc. Argent. Botan. 10: 303. 1965.
Description and illustration see there.

Physalacria

PHYSALACRIA LANGLOISII Ellis & Ev., Journ. Mycol. 4: 73. 1888.
As for a description see Baker, Bull. Torr. Bot. Cl. 68: 284. 1941, and the original description.

Material studied: CHILE: Santiago: Laguna Aculeo, 24–IX–1967, Singer M 7791 (SGO).—17–X–1967, Singer M 7804, on dead branch of *Myrceugenella* (SGO).—ARGENTINA: Tucumán: 17–IV–1949 until 10–VII–1949, Singer T 458, T 458 a, T 543 on *Phoebe* (LIL).—U.S.A.: Florida: Brickell's Hammock, Dade Co., leg. Singer 25–X–1942 (FH).—Two collections from Coconut Grove, leg. Thaxter (FH).

Gloiocephala

Gloiocephala mycenoides Sing. spec. nov.—Pileo albo, piloso, ut minime sub lente, margine ciliato, convexo vel centro leniter depresso, 1–3 mm lato.—Lamellis nullis; superficie hymeniali aut levi aut paucis venulis radialibus sub lente visibilibus, sub lente pilosa.—Stipite albo, sub lente apicem versus subtiliter piloso, basin versus densius pubescente e pilis elongatis, centrali vel subcentrali, filiformi, 6–22 × 0.1 mm.—Contexto tenuissimo, inodoro.—Sporis 10–11 × 5.5–6.5 μ, ellipsoideis, levibus, hyalinis, inamyloideis.—Hymenio e basidiis et cystidiis efformato. Basidiis 26–30 × 8.5–9.5 μ, tetrasporis; basidiolis plus minusve fusiformibus. Cystidiis 36–76 × 7.5–16 μ, ampullaceis, apice pro ratione tenuiore (2.5–5.5 μ diam.) et frequenter quamquam haud constanter subcapitulatis (capitulum 3–7 μ diam.), hyalinis, tenui-tunicatis, levibus et integris, inamyloideis.—Hyphis inamyloideis, fibuligeris.—Epicute pilei hymeniformiter constructa, elementis vesiculosis e.gr. 22 × 15 μ saepe pedicellatis, levibus composita, et dermatocystidiis interspersis. Dermatocystidiis pilei et stipitis cystidiis hymenialibus similibus, sed magis variabilibus,

interdum longisssmis et membrana firmiuscula (haud crassa) inamyloidea instructis.—Ad folia emortua Aextoxici in silva nebuligena. Typus: CHILE: Coquimbo: Fray Jorge, 22–VII–1967, Singer M 7161 (SGO).

Lachnella

Lachnella australis Sing. spec. nov.—Carpophoris albis, alutaceo-albidis in siccis quando maturi sint, extus lanosis, ad marginem superum pilosis pilis erectis sed haud rectis, levibus, ad basin contractis et alutaceo-pallidis frequenterque oblique subprotractis, in substrato insiticiis, cupuliformibus, initio (in primordiis globoso-lanatis) hymenium haud exponentibus, dein profunde fusoideo-cupuliformibus margnem versus gradatim attenuatis, usque ad 0.8 mm altis et paullum minus latis, pendulis.—Superficie hymeniali albida, levi, profunde concava, glabra.—Stipite nullo.—Contexto albo, inodoro.—Sporis 7.5–8.5 × 4–4.8 μ, ellipticis sed ad latus interius applanatis, appendice hilari minusculo sed interdum oblique elongato munitis, guttula olei interna globosa instructis, hyalinis, levibus, inamyloideis.—Hymenio a basidiis tantum efformato; basidiis 20–25 × 5.5–7 μ, tetrasporis; basidiolis late clavatis. Cystidiis nullis.—Hyphis a basi marginem versus currentibus, hyalinis, subparallelis, haud gelatinosis, levibus, fibuligeris, inamyloideis; in subhymenio intertextis, brevibus et tenuibus.—Pilis superficieis sterilis a basi latiuscula (2.5–5.5 μ) gradatim attenuatis apicem tenuem (2.5 μ cc. lato) versus, immediate ex hyphis tramatis natis (hypotrichio nullo), crasse (1–1.7 μ) tunicatis et pseudoamyloideis, minute e granulis crystalloideis hyalinis incrustatis vel sparse incrustatis, membrana ad apicem subtenuiore sed magis incrustata instructis et ibi minus fortiter pseudoamyloideis, longissimis, et Crinipellium in meantem revovantibus.—Ad Chusqueam couleu dense gregatim sed haud aggregatim. Typus: ARGENTINA: Rio Negro: Camino de Laguna Frías al Paso de las Nubes, 24–III–1963; Singer M 3185 (BAFC).

This differs from other species by the combination of the following characters: Pure white color tending to buffish at base, contracted and pseudo-stipe-like base. This may be very close to *L. ciliata* which however is described by W. B, Cooke as being clampless, with shorter basidia, having shorter hairs, and growing on other hosts.

LACHNELLA ALBOVIOLASCENS (A. & S. ex Fr.) Fr., Summa Veg. Scand. p. 365. 1849.

Our specimens are at first globose and villous, closed, soon opening and cupuliform, up to 1 mm broad, white, becoming caesious gray. Hymenium surface white becoming grayish. Spores 15–16 × (8.5)–9–10 μ, ovoid-

ellipsoid or ellipsoid, smooth, inamyloid. Basidia 60 × 12–13.5 μ, 4-spored. Cystidia none. Hairs of sterile surface thick (1–1.5 μ) walled with walls swelling in KOH to 1.5–6 μ after the crystals have dissolved, covered by granular calcium oxalate crystals when seen in iodine solutions, weakly but distinctly pseudoamyloid, long, unicellular, with rounded tips. Hyphae with clamp connections, inamyloid.—On twigs of *Austrocedrus chilensis*, at Santa María, Lago Nahuel Huapí, 30–IV–1964, Singer M 3706 (BAFC).

Flagelloscypha

Flagelloscypha gayana (Lév.) Sing. comb. nov.

Cyphella gayana Lév., Ann. Sc. Nat. III. 7: 153. 1846.
Calyptella gayana (Lév.) W. B. Cooke, Sydowia, Beihefte II. 4: 37. 1961.
Chaetoscypha gayana (Lév.) O. Kuntze, Rev. Gen. 2: 847, 1891.
Flagelloscypha coloradensis W. B. Cooke l.c. p. 60.

Carpophores white, even when dried, later becoming whitish, cupuliform with slightly ventricose or cylindric outline, pilose-woolly outside, sligthly and shortly basally pseudostipitate, or sessile, above apically circularly opened when mature, but on drying the marginal rim bending inwards, about up to 4 mm high, mostly less, and 1.3–2 mm broad.—Hymenial surface white then light ochraceous, smooth, glabrous, deeply concave.—Context white, thin, inodorous, rather fleshy at base, thin above.

Spores (6)–7–10.2 × 1.7–3 μ, narrowly fusoid-cylindric, more or less applanate on inner side, often even slightly allantoid-curved, above attenuate and often acute, but not always so, smooth, hyaline, inamyloid. —Hymenium: Basidia 18–25 × 4–6 μ, 4-spored. Cystidia none.—Hyphae of subhymenium of small short, sometimes elongated elements, not sharply separated from the trama where the hyphae are thin to somewhat thick-walled, inamyloid, subparallel and running from the basal trama upwards to the rim of the cup, hyaline, giving directly rise to the surface hairs. Clamp connections present, also between hyphae and hairs, sometimes of the medallion type.—Hairs of the sterile surface erect on the rim-line, somewhat wavy otherwise, consistently filamentous and in parts strongly spirally contorted in KOH, hyaline, in the lower part thick-walled (wall 1–1.5 μ thick, slightly swelling in KOH to 1.5–2 μ diam.), in apical part for a shorter or longer stretch thin-walled and acute to obtuse, in the former case often appearing slightly flagellate, but not constantly so, 3–5 μ broad at their base, usually narrower at the apex, usually slightly broader in KOH solutions, unicellular and very long, rarely with a clamped septum somewhere near apex, incrusted by short needle-like crystals or

merely finely granular, the incrustation dissolving slowly in KOH, the wall inamyloid to very vaguely pseudoamyloid in some hairs where there seems to exist an inner wall layer, very thin and often poorly reacting, which, after hydrolisation in NH_4OH, turns pale livid-cinnamon in the Melzer, but reaction inconstant and very weak.—In dense aggregates on fallen branches, mostly on *Nothofagus*. Spring and fall.

Material studied: ARGENTINA: Neuquén: Lago Correntoso, 16–IV–1965, Singer M 5003 (BAFC).—Puerto Manzano, 22–IV–1964, Singer M 3438 (BAFC).—Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 27–IV–1965, Singer M 5304 (BAFC).—CHILE: Valdivia: Cuesta Santa Elvira, 13–IX–1967, Singer M 7502 (SGO).—Maule: Molco, 4–VIII–1967, Singer M 7227 (SGO).

Flagelloscypha eruciformis (Fr.) Sing. comb. nov.

Cyphella erucaeformis Fr. Syst. Mycol. 2: 203. 1822.

For a description, see Reid (under *Calathella erucaeformis*), Persoonia 3: 123. 1963. Our collections (Argentina: Neuquén: Rio Bonito, Singer M 3287, BAFC) are in general agreement with the data given by Reid, but do not show any darkening from the base upwards ever. The spores are 5–7.5 × 2.7–3.3 μ. The hairs are thick-walled (wall 1.2–1.8 μ, inamyloid, incrusted by crystals), long, hyaline. Our material grew on (conifer?) wood. All this is in close agreement with material from Lépinay, France on *Fraxinus* (FH) which I have compared. Fries (l.c.) describes this species as "nivea".

AMANITACEAE

Amanita

AMANITA UMBRINELLA Gilbert & Cleland in Bres., Icon. 27: 273. 1940.

Description see Singer, Sydowia 8: 121. 1954.

AMANITA GAYANA (Mont.) Sacc., Syll. F. 5: 9. 1887.

Agaricus gayanus Mont. in Gay, Hist. Chile 7: 332, 1850, pl. 7, fig. 9.

Pileus bright and deep orange ("totem", "tomato"), with paler or yellow ("Martius y" M & P) margin, smooth excepting for the volval rests and the striate-sulcate margin, hemisperical at first, then convex, obtuse, about 30 mm broad.—Lamellae white, close, free.—Stipe white to

yellow, deeper colored where floccose from the volval rests, subcylindric, more or less bulbous (13–22 mm diam.) below, 40–55 × 7–17 mm; annulus superus not or poorly developed; volva deep and bright orange ("totem", "tomato" M & P), slightly pallescent and gradually disappearing, flocconous, not forming a cup-like basal volva but merely a series of floccons which cause the bulb to be verrucosely margined, the volval floccons reaching rather high up and may appear to form an annulus in some specimens.—Context white, inodorous.

Spores 9.5–11.3 × 7.5–8.8 μ, short ellipsoid or ellipsoid, smooth, hyaline, inamyloid.—Basidia 29–33 × 9–10.5 μ, 4-spored.—Hyphae with clamp connections, inamyloid.—Veil floccons on pileus consisting of hyphae ending in swollen spherocysts and subisodiametric bodies 20–83 × 12–60 μ which are smooth and bright yellow in KOH.

Under *Nothofagus obliqua*, in May.

Material studied: CHILE: Valdivia: Cuesta de Santa Elvira, 14–V–1967, Singer M 6889 (SGO).—15–V–1967, Singer M 6912 (SGO).

AMANITA DIEMII Sing., Sydowia 8: 120. 1954.

Description see there, see also Singer & Moser, Mycopath. & Mycol. Appl. 26: 160. 1965.

AMANITA GEMMATA (Fr.) Gillet, Champ. Fr., Hymen. p. 52. 1874.

Description see A. H. Smith, Mushrooms in their Natural Habitat, with a stereo-slide in color. This description fits our Chilean collections well enough. These refer to a fungus which has caused serious poisonings in Chile. This same population, from a pine woods near Concepción, has spores 9–12.5 × 7–10 μ, mostly 10–11 × 8.5–9 μ, inamyloid; hyphae and basidia clamped.

This same species has also been observed in the province of Valdivia, also in pine plantations.

This species is very closely related to but not identical with the preceding species which is autochthonous in Southern Chile and Argentina and grows in mycorrhizal connection with native *Nothofagus*.

A. H. Smith is not convinced (l.c.) that the American race which he describes under *Amanita junquillea* Quél. is harmless. Heim indicates a somewhat doubtful case of poisoning with *A. gemmata*, but most European authors do not think this species poisonous. The presence of an alcaloid has been established in the Concepción material.

AMANITA SALMONOPHYLLA Sing. spec. nov. ad int. – This is a species of the southern Argentine pampa, of the Vittadinii-group, and characterized by its salmon colored lamellae.

AMANITA FERNANDEZIANA Sing., Ark. f. Botan. 4: 394. 1959, ad int.

Description see there.

AMANITA PHALLOIDES (Vaill. ex Fr.) Secr., Mycogr. Suisse 1: 8. 1833.

This well known species, now rather widely distributed in Central Argentina has not been found in Chile thus far, but may have been introduced with its most common mycorrhizal partner, frequently planted even in South Chile: the Mediterranean evergreen oaks. Its olive green color should be sufficient to spot it.

AMANITA RAVENELII (Berk. & Curt.) Sacc., Syll. F. 5: 15. 1887.

A generally white species, easily determined in the Argentine pampa where it has been found as far south as Rio Negro.

Volvariella

VOLVARIELLA SPECIOSA (Fr. ex Fr.) Sing., Lilloa 22: 401, 1951.

Probably rare in the south, this species is rather commonly encountered in Argentina and Chile Central as well as in the north. The gray variety (var. *gloiocephala*) has also been found. Description see Singer & Digilio, Lilloa 25: 246, 1952 (as *V. cnemidophora*).

Pluteus

PLUTEUS GLAUCUS Sing., Sydowia 15: 128. 1961.

Description and illustration see l.c. p. 114, pl. 12, fig. 3.

PLUTEUS SPEGAZZINIANUS Sing., Sydowia 6: 221. 1952.

In our region, we have only found the typical form as described in Lloydia 21: 202. 1958.

Pluteus eucryphiae Sing. spec. nov.—Pileo fuligineo ("eagle" M & P) in centro, umbrino ("winterleaf" M & P) vel biso marginem versus, per decimam vel tertiam partem radii pellucide striato, vel per 2–3 mm tantum striato, subruguloso vel sublevi et leniter fibrilloso vel subglabro in centro, levi glabroque marginem versus, glabrescente, convexo, dein interdum applanato, plerumque subumbonato, 42–60 mm lato.—Lamellis albis, dein roseis, ad aciem (ut in *P. spegazziniano*) leniter brunneolis (in vegetis saepe haud notabiliter) discoloribus sed in siccis sub lente

brunneolis, moderatim latis vel latis, confertis, liberis.—Stipite albido vel ad basin interdum caesio (29–B–1, M & P), fibrillis subfuligineis vel subatris appresse ornato in parte inferiore vel basali, aequali sed basi incrassata insigni, interdum truncate adnata viso, 42–55 × 4–6 mm, ad basin 7–10 mm lato.—Contexto albo, sub cuticula ei concolori, inodoro. —Sporis 7–8.5 × 5.5–7 μ, breviter ellipsoideis vel subglobosis, applanatione suprahilari gaudentibus, roseolo-stramineis in maturis, levibus.—Hymenio e basidiis et metuloidibus efformato et cheilocystidiis marginato. Basidiis 22–27 × 7–9 μ, ventricosis, tetrasporis. Cystidiis metuloideis, 65–80 × 15–23 μ, primum tenui-tunicatis vel pseudomembrana interna instructis dein crasse tunicatis (membrana 0.5–5 μ diam., crassiore in apice si integer est, in parte ventricosa in ceteris), ampullaceis, rarius apice extremo dilatatis, appendiculatis appendicibus apicalibus, raro subapicalibus 0.5–3.5 μ projicientibus, spiniformibus, 1–10, plerumque 2–4, rarius nonnullis bifurcatis et tunc subhorizontalibus, hyalinis, numerosis ad latera et acies lamellarum sed haud densis. Cheilocystidiis 21–80 × 9–16 μ, paucis angustioribus, plerumque vesiculoso-pedicellatis, tenuitunicatis et levibus, aliis ventricoso-clavatis, pigmento intracellulari dissoluto diluto fuscidulo repletis, sed multis hyalinis intermixtis.—Hyphis fibulatis (sed nonnullis septis defibulatis secundariis praesentibus!).—Epicute pilei ex elementis repentibus appressis, membris terminalibus interdum subcystidiformibus sed haud appendiculatis, membrana 0.5 μ crassa, ad apicem tantum interdum usque ad 1.5 μ crassa instructis, ventricosis vel ampullaceis, elongatis, succo fuscidulo-atro impletis, usque ad 110 × 15–18 μ.—Ad truncum Eucryphiae vel possibiliter aliarum arborum anectotrophicarum. Typus (M 5567) in BAFC conservatus est.

Material studied: CHILE: Valdivia, Cordillera Pelada, west slope, at 450 m alt., 7–V–1965, Singer M 5567 (BAFC), typus.—Hueycolla, at 50 m alt., 4–V–1967, Singer M 6680 (SGO).

PLUTEUS SUBSPINULOSUS Horak, Nov. Hedwigia 8: 172. 1964.

Description and illustration see there. We do not know this species.

PLUTEUS RAPHANIODORUS Horak, l.c. p. 173.

Description and illustration see there.

PLUTEUS APORPUS Sing., Sydowia 8: 122. 1954.

Description see there, or in Lloydia 21: 213. 1958.

We have described a forma *porpophorus* Sing, Sydowia 16: 115. 1963, which differs from the type exclusively by the presence of clamp connections but maybe also by some other minor characters (see description l.c.).

We suspect now that this is the same as *P. raphaniodorus* Horak. We do not wish to comment on the relation between these two taxa before additional material has been studied. The odor is probably not constant.

PLUTEUS DIPTYCHOCYSTIS Sing., Sydowia 8: 124, 1954.

Description see there. We have also found additional material from Chile: Valparaiso: Relict forest at Quintero, 27–VI–1967, Singer M 7001 (SGO), also under Myrtaceae.

Pluteus atriavellaneus var. **coquimbensis** Sing. var. nov.—Pileo grisello ("camel's hair", "acorn" M & P), subtiliter fibrilloso-pubescente, ad marginem pellucide striato, glabrescente, neque radiatim variegato neque rimoso, neque in centro fibrilloso-aspero, neque velutino neque rivuloso, campanulato-convexo vel convexo, 10–13 mm lato.—Lamellis roseolis, subconfertis vel confertis, sat latis, liberis.—Stipite albo, appresse longitudinaliter albo-sericello, a basi attenuato, usque ad 18 mm longo et 2–4 mm lato; mycelio basali albo-strigoso.—Contexto albo, inodoro.—Sporis 7.3–7.6 × 5–5.5 μ, ellipsoideis vel subcylindraceis vel frequentius breviter ellipsoideis vel ovoideis.—Basidiis tetrasporis. Cystidiis 35–42 × 11–18 μ, ampullaceis, haud pigmentatis neque incrustatis, moderatim numerosis. Cheilocystidiis 22.5–77 × 15–40 μ, vesiculoso-pedicellatis vel ventricoso-subclavatis et latis et plerumque pedicellatis, rarius ampullaceis vel mucronatis, obtusis, hyalinis.—Hyphis defibulatis.—Epicute pilei pigmento interdum condensato, interdum aequaliter dissoluto in elementis appressis elongatis, membris terminalibus plerumque 50–73 × 28–35 μ ascendentibus et tumescentibus in arei definitis sed haud hymeniformiter dispositis.—Ad lignum emortuum. Typus: CHILE: Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6509 (SGO), typus varietatis.

PLUTEUS FERNANDEZIANUS Sing., Lloydia 21: 220. 1958.

Pluteus brunneoolivaceus Horak, Nov. Hedwigia 8: 165. 1964.

Descriptions and illustrations see Singer and Horak, l.c.

PLUTEUS JAFFUELII (Speg.) Sing., Sydowia 8: 123. 1954.

Description see Lloydia 21: 222. 1958.

The forms with olive ground color on the stipe have been described as *Pluteus osorniensis* Horak. Since the cystidial characters that divide this species from *P. jaffuelii* are not convincing and, at any rate, not constant, this may be considered a form or variety of the older species, which is extremely common from Central to South Chile and in Southern Argentina.

PLUTEUS NIGROLINEATUS Murr., Mem. Torr. Bot. Cl. 66: 30. 1939.

Description of the South American collections:

Pileus gray or blackish radially innately fibrillosely lined on pallid, paler, or cream pallid ground, at the same time transparently striate and moderately conspicuously pectinate, the radiating lines somewhat reticulate towards the middle where there are generally small inconspicuous appressed gray or darker squamules, convex then applanate, 21–45 mm broad.—Lamellae sordid pink or caesious-pink, at first white, with the edges concolorous with the sides, close to subclose, moderately broad, quite free. Spore print pink.—Stipe white with gray, caesious-steel-gray or fuliginous-gray longitudinal fibrils in the lower half, the base blue ("glacier blue" M & P), equal or tapering upwards, 41–65 × 4–5 mm.—Context white, unchanging, fleshy, odor insignificant.—Spores 6–10 × 4.7–7.4 μ, mostly 6–9 × 5–6 μ, ellipsoid, or short ellipsoid.—Basidia 18–36 × 8.5–9.7 μ, 4-spored. Cystidia 48–88 × 15–25 μ, versiform, but mostly ventricose with or without a short mucro, obtuse, thin-walled, hyaline; cheilocystidia 38–68 × 7–22 μ, even more versiform than the pleurocystidia, varying from cylindric-clavate to ventricose or ampullaceous, often (even twice) mucronate with an obtuse or acute mucro 3–6.5 μ diam., at times even fusoid-acute, hyaline.—Hyphae in the pileus trama and the inverse hymenophoral trama with clamped and simple septa, but clamp connections numerous (base of basidia mostly clamped). Subhymenium of very variable elements and sometimes the terminal member of the interwoven hyphae which form the subhymenium not continued into a basidiole and in this case showing a tendency to be irregular and branched, e.gr. cross-shaped, all hyaline, some with clamp connections.—Epicutis consisting of fascicles of terminal members of the hypodermial tissue which, here, becomes ascendant or erect, forming in places a trichodermium, the end cells 80–300 × 8–15 μ, long clavate and obtuse or acute, at times more ampullaceous, rarely forked, with dissolved intracellular fuscous pigment, often restricted to the vacuoles.—On fagaceous (oak), begnoniaceous (jacaranda), and myrtaceous etc. tree trunks, generally gregarious.

Material studied: CHILE: Colchagua: Pumanque, 12–VII–1967, leg. W. Lazo, det. Singer (SGO).—ARGENTINA: Tucumán: Capital, 28–I–1959, Singer T 3264 (LIL).—U.S.A.: Florida: Gainesville, Sep. 8, Murrill F 18 103 (FLAS), typus.

The species is characteristic because of the combination of blue stipe base and presence of clamp connections.

Pluteus eugraptus (Berk. & Br.) Sacc. var. **chusqueae** (Horak) Sing. comb. nov.

Pluteus psychriophorus var. *chusqueae* Horak, Nov. Hedwigia 8: 189. 1964.

According to the description by Horak, l.c., this would rather be a variety of *P. eugraptus*. We do not know it.

PLUTEUS FLAMMIPES Horak, Nov. Hedw. 8: 185. 1964.

Pileus badious, often with orange ground color, or margin, either not striate or only part of the radius transparently striate in specimens with on the margin poorly developed granular covering, but sometimes very finely granular all over and sometimes subglabrous all over, not viscid, in the central portion slightly rugulose or folded-rugose, hemispherical, then convex, eventually often applanate to concave, with or without a broad obtuse umbo, up to 27 mm broad.—Lamellae orange pink with deeper orange edge, dried under a lens clearly deep orange margined and with deep orange dots all over (corresponding to the pleurocystidia !), close to subclose, broad, free.—Stipe orange, sometimes brigher colored at apex and/or base, glabrous, smooth, equal or slightly tapering upwards, 30 × 3.5 mm, according to Horak 15–40 × 2–3 mm.—Context somewhat concolorous, in the peripheric parts, with the surfaces or entirely concolorous, fleshy, soft, inodorous.

Spores 6.2–7.2 × 4.5–5.8–(6) µ ellipsoid, or ovoid-short-ellipsoid.—Basidia 25–32 × 7–8 µ, 4-spored. Cystidia not scarce but never crowded, 40–79 × 7.5–16.5 µ, mostly ampullaceous, fewer ventricose, entire, yellow or some hyaline, but the yellow ones losing the pigment by dissolution in NH_4OH, or in KOH, thin-walled. Cheilocystidia making the edge heteromorphous, extremely versiform, varying between narrowly and broadly clavate to ampullaceous, others ventricose, others with slight constrictions, hyaline to yellow-orange in KOH (pigment rapidly dissolving), smooth and entire, thin-walled, 27–59 × 7–15 µ.—Hyphae without clamp connections, with inverse hymenophoral trama.—Epicutis a hymeniform layer consisting of mostly vesiculose-pedicellate cells, few of them with a slight short obtuse mucro, none of them strongly projecting, all filled homogenously with the fuliginous-badious cell sap, 23–42 × 12–25–(30) µ. Hypodermium of small hyaline, irregular short cells.

On *Nothofagus* wood in shady woods, often among *Chusquea*, solitary or in small groups, fruiting in fall.

Material studied: CHILE: Llanquihue: 15 km NE of Puerto Pargua, 9–V–1967, Singer M 6799 (SGO).—The type was found in the province of Osorno.

Pluteus ricardii Sing. spec. nov.—Pileo griseo ("taupe", ad marginem 7–A–9, M & P), brevissime striato, levi, neque venoso neque rugoso, sicco, convexo, dein centro applanato vel leniter depresso, 16–18 mm lato.—Lamellis albis, dein roseis, acie albis dein roseis, subangustis vel mediocriter latis, confertis, liberis.—Stipite albo, ad basin saepe cinerascente, fibrillis pigmentatis destituto, glabro, levi, aequali, sicco, 17–19 × 2–2.2 mm.—Contexto albo, immutabili, fragili, inodoro.—Sporis 4.8–5.5 × 4–5 μ, subglobosis, perpaucis exceptionaliter geometrice fere globosis, levibus, roseolo-stramineis.—Hymenio e basidiis et cystidiis efformato. Basidiis 21–28 × 7.5–8 μ, tetrasporis, ventricosis. Cystidiis et cheilocystidiis simillimis (sed his saepe magis vesiculosis et minoribus e.gr. 22–27 × 10–11 μ) 22–56 × 10–25 μ, ventricosis (latioribus in tertia parte inferiore aut/et superiore), interdum centro leniter constrictis, tenui-tunicatis, hyalinis, sed haud persistenter lenissime tenuissime resinoso-incrustatis incrustatione haud separabili inconspicua straminea.—Hyphis defibulatis.—Epicute pilei e cellulis vesiculosis tantum efformata, his hymeniformiter dispositis, 23–37 × 16–26 μ, haud mucronatis, pigmento intracellulari aequaliter dissoluto fuscidulo-griseo impletis, tenui-tunicatis.—Ad frustula lignea arborum frondosarum (*Persea lingue*?), vernalis. Typus: CHILE: Concepción: Boca del Bio-Bio, 11–XI–1967, Singer M 7819 (SGO).

This species, characterized by the gray smooth pileus, the evenly dissolved pigment of the epicuticular cells and the constantly hyaline cystidia as well as the small spores, has been named for Dr. C. Ricardi who organized the collecting trip that produced this new species.

PLUTEUS CHUSQUEAECOLA Horak, Nov. Hedwigia 8: 190. 1964.

Description and illustration see there. The type came from the province Rio Negro, path from Laguna Frias to the Paso de las Nubes, in Argentina.

PLUTEUS NANUS (Pers. ex Fr.) Kummer, Führ. Pilzk. p. 98. 1871, sensu Orton, Trans. Brit. Mycol. Soc. 43: 356. 1960.

Description of South American material:

Pileus fuscous to grayish fuscous, mostly with sepia umber margin and dark brown center, over one quarter of the margin-radius transparently striate, but neither striate nor sulcate when dried, with rugose center, not hygrophanous, macroscopically glabrous, under a lens finely micaceouspunctate, convex, later applanate, often broadly umbonate, 21–27 mm broad.—Lamellae pink, with pink edges, broad, ventricose, free.—Stipe white, eventually often with sordid grayish-cream tone but without innate or superficial fibrils or dark punctations or lines, wet often almost

diaphanous, dry often shining, whitish when dried, solid, equal, 26–28 × 2–3 mm.—Context white, fragile, inodorous.

Spores 6.8–8 × 5–6.7 μ, ovoid or short ellipsoid to subglobose.—Basidia 26–33 × 2–8 μ, 4-spored. Cystidia and cheilocystidia similar (only cheilocystidia often with shorter mucro-like neck, this then 6–10 × 6–7 μ whereas in other cheilocystidia and most pleurocystidia the neck is 7.5–12 μ thick and longer), 45–63 × 16–22 μ, hyaline, ampullaceous, with rounded tip, thin-walled.—Hyphae without clamp connections.—Epicutis of pileus formed by a hymeniform layer consisting of erect vesiculose-pedicellate (or non-pedicellate) cells, some of them mucronate by a small mucro, 13–40 × 7.5–30 μ, with thin (up to 0.5 μ) wall, with intracellular-vacuolar pigment which is locally condensed and chestnut brown, or warm brown; among these cells one encounters occasionally small hyaline bodies which may be called dermatocystidia, these are, however, not projecting and only 23–25 × 7–8.5 μ, and ventricose, at times with capitate (as in *Conocybe*) apex (3.5–4 μ diam.).

On wood of *Nothofagus dombeyi* and of other trees (mostly frondose), fall.

Material studied: ARGENTINA: Neuquén: La Angostura, 29–IV–1964, Singer M 3651.—CHILE: Colchagua: Pumanque, 12–VI–1967, W. Lazo PU-70 (SGO).—I feel fairly certain that my material from the Caucasus (see Beih. Botan. Centralbl. II. 46: 105. 1929) likewise belongs here; so do no doubt those indicated and described by Orton from England, l.c.

PLUTEUS FULIGINEOVENOSUS Horak, Nov. Hedwigia 8: 190. 1964.

Our material differs from Horak's in deeper fuliginous pileus which is estriate, in white or (grayish-) whitish stipe and slightly larger spores (5.8–7–(7.8) × 5–6.2 μ, short ellipsoid to (mostly) subglobose, with moderately thick wall), and perhaps smaller cystidia. For the original description see Horak, l.c. Our material is from ARGENTINA: Neuquén: Lago Correntoso, 11–III–1963, Singer M 3517 (BAFC); Horak's from CHILE: Osorno: Puyehue, 31–III–1963, no. Y 8.

PLUTEUS SUBMARGINATUS Horak, l.c. p. 188.

Description and illustration see there.

PLUTEUS PSEUDEUGRAPTUS Horak, l.c. p. 187.

Description and illustration see there.

Chlorophyllum

CHLOROPHYLLUM MOLYBDITES (Mey.) Mass., Kew Bull. 1898: 136. 1898.

This is the same as *Lepiota morgani* and *Agaricus camporum* Speg. and possibly *C. esculentum* Mass., a species common in the Americas, Eastern Asia, and tropical Africa. The infraspecific taxonomy of this complex of forms is very difficult inasmuch as apparently not all forms or races are poisonous, but we have proven cases of poisoning with North American, Argentine, Philippine, and East African material.

The most detailed description is that by Singer, Papers Michigan Acad. Sc. Arts & Lett. 32: 137. 1948. However, material from Africa as well as from Southern South America has shown me that the hyphae of the stipe have scattered clamp connections aside from clamp-like bulges and false clamps of all kinds and simple septa. These true clamp connections may have been too scattered to be observed in North American material.

The Argentine material collected by L. Bonaiges south of Chascomus, prov. Buenos Aires, 15–XII–1965, comm. Singer S 570 (BAFC) was eaten by the collector and caused a strong poisoning although the patient recuperated. Pharmacological tests made in the Facultad de Farmacia y Bioquímica of the Universidad de Buenos Aires showed the presence of a poisonous principle. This material had the general characters of the Florida material, with the following special characteristics:

Lamellae mostly without a clear greenish tinge, but rather a pale greenish stramineous to avellaneous color in fresh overmature material; spore print 19–C–1 (M × P). Context white, changing to a warm reddish brown rather than pink. Spores (9)–9.5–10.5–(12) × 7–7.5 μ, from print 9–10.5–(12) × 6.8–7.8 μ. Basidia 4-spored Cheilocystidia vesiculose, 20–34–(50) × (6.5)–11–20 μ. Stipe tissue with few clamped septa (true clamps), great majority without true clamp connections. The cresyl blue mounts show that not all spores were deep blue all over, but only a part; others showed clearly the pinkish metachromatic line in the endosporium as in *Macrolepiota*, especially in very diluted medium.

African material studied by us which has been eaten by the collector (Grinling no. 40905) came from the Brazzaville region of the Congo, and had grass green spore print which after a few days became ocher (Séguy 339); flesh also becoming reddish brown by exposure; lamellae white, then light apple green. This has spores 8.7–11–(12.5) × 5.8–7.2 μ, mostly

9.5–10.5 × 7 μ, and very scarce clamp connections among non-clamped septa in the stipe. Apparently non-poisonous.

Macrolepiota

MACROLEPIOTA PROCERA (Scop. ex Fr.) Sing., Pap. Mich. Acad. Sc. Arts & Lett. 32: 141. 1948.

A description of this species, common in Europe, can be found in any of the current publications in Europe.

In South America, it would appear that the situation regarding the "stirps" Procera is not any easier to resolve than it is in Europe or North America. We seem to have a series of microspecies, not very clearly separated by a definite hiatus.

In South Chile, two such forms have been found. One has the general characters of *M. procera* as found in Europe although only the lower portion of the stipe has the dark and conspicuous scales characteristic for this species, and the spores are somewhat smaller than we personally found them in European material. The spores are here 13.5–16.3 × 10–10.8 μ. This has first been reported by Singer & Moser, in Mycopath. & Mycol. Appl. 26: 161. 1965 from Hueycolla, Valdivia, at the coastal marshes. According to additional material seen at SGO this appears to be rather common in Southern and Central Chile.

Another form coincides by its stipe characters with the following species although some of the Chilean collections have spores at least as large as those indicated above, viz. 16–17–(20) × 10–11 μ. One such collection comes from Valdivia: Cuesta de Santa Elvira, in grassy places under *Nothofagus dombeyi* and *N. obliqua.* This is somewhat intermediate between *M. procera* and *M. bonaerensis.*

MACROLEPIOTA BONAERENSIS (Speg.) Sing., Lilloa 22: 417. 1951.

A description of this species can be found in Singer & Digilio, Lilloa 25: 272. 1952.

MACROLEPIOTA RACHODES (Vitt.) Sing., l.c.

A description of this species, common in Europe, can be fond in the current European literature. We have found it in South Chile and in the high mountains of the province of Tucumán, and compared it with material from Austria, without finding any difference. However, this species is not common in South America.

LEUCOAGARICUS NAUCINUS (Fr.) Sing., l.c. p. 418.

A description of South American material of this species can be found in Arkiv f. Botanik 4: 396. 1959. It is often confused with *Agaricus* spec. and is sold in the vegetable markets of Buenos Aires and Santiago.

Leucogaricus atrofibrillosus Sing. spec. nov.—Pileo nigro-fibrilloso, albo inter fibrillas appressas, centre integro nigro, sicco, levi, convexo, interdum conico-convexo, dein applanato, interdum concavo, subumbonato, rarius umbonato vel exumbonato, 20–40 mm lato.—Lamellis albis, acie albis, confertis, ventricosis, liberis.—Stipite albo, glabro, cylindraceo, interdum attenuato apicum versus, 20–60 × 1.5–3 mm; annullo albo, plerumque nigromarginato, membranaceo, infundibuliformi, demum submovili.—Carne alba, fragili, immutabili, inodora.—Sporis 6.6–7.2 × 3.7–3.8 μ, ellipsoideis, levibus, hyalinis, pseudoamyloideis, linea rosella metachromatica endosporii in medio azurei-cresylici visibili, poro germinativo nullo vel indistincto.—Hymenio basidiis formato et cheilocystidiis marginato; basidiis (18.5)–21–23.5 × 7–7.7 μ, tetrasporis; cheilocystidiis versiformibus, clavatis, ventricosis, fusiformibus, interdum constrictis, numerosis, hyalinis, nonnullis pallidissime porphyreis, integris, ex eis acie heteromorpha.—Hyphis fibulis destitutis, inamyloideis; hyalinis in tramata.—Epicute pilei, ubi pigmentata est, e trichodermio frequenter depresso consistente, hyphis trichodermii in catenulis clementorum subelongatorum, latiusculorum (20–41 × 9–16 μ), membro terminali apice late rotundata gaudente.—Ad humum silvestrem; typus (BAFC) lectus a R. Singer, Río Bonito, Puerto Manzano, Lago Nahuel Huapí, provinciae Neuquén, Argentina, 6–IV–1963, N° M 3291, sed sat communist est in Patagonia, Chile Australi et Centrali.

Leucoagaricus erythrellus (Speg.) Sing. comb. nov.

Lepiota erythrella Speg., An. Mus. Nac. B. A. 6: 93. 1899.

A good description of this species was given by its author l.c.

Our Southern material has the following characteristics:

Pileus orange ("Formosa" to "Mindoro", or "chinook"), margin sometimes white, center sometimes nearly black, radially appressedly fibrillose or near margin rimulose, on center often glabrous and entire, smooth, or slightly sulcate at margin, convex, then depressed in the center, eventually applanate or concave, 35–40 mm broad.—Lamellae pure white, rarely with a slight cream or greenish tinge, broad, close, free.—Stipe white, glabrous, most frequently with rather strongly broadened base, 40–80 × 2–6 mm, bulb at times reaching 9 mm; annulus apical or mediane to infe-

rior, white, smooth, ascendant-funnel-shaped, with orange outer rim or all unicolorous, often curved so that its outer portion is horizontal, membranous, eventually sometimes disappearing.—Context white, inodorous, fleshy.

Spores 7.5–8.5 × 4–5 μ, ellipsoid to oblong, smooth, with a stupper-like rather narrow germ pore which is sometimes truncate, or more often not truncate, hyaline, strongly pseudoamyloid.—Basidia e.gr. 14 × 6.8 μ, 4-spored. Cheilocystidia up to 41 × 11.5 μ, versiform, often clavate, ventricose, or ampullaceous, numerous, often fasciculate, hyaline, smooth. Cystidia none.—Hyphae without clamp connections almost inamyloid (inamyloid but in places very weakly pseudoamyloid).—Epicutis of pileus consisting of non-gelatinized radial hyphal elements which are pigmented by an intracellular dissolved pigment and generally granularly pink incrusted, moderately broad.

In mixed woods on the ground, solitary or in small groups, fruiting in fall.

Material studied: ARGENTINA: Rio Negro: Puerto Blest, 23 III–1963, Singer M 3150 (BAFC).—Laguna Frías, 21–III–1963, Singer M 3116 (BAFC).—CHILE: Coquimbo: Fray Jorge, Singer M 6530 (SGO).—Also numerous collections from the La Plata region (Argentina and Uruguay including authentic material).

Leucoagaricus sublittoralis (Kühner ex Hora) Sing. comb. nov.

Leucoagaricus sublittoralis (Kühner) Sing., Lilloa 22: 422. 1951.

Lepiota sublittoralis Kühner ex Hora, Trans. Brit. Myc. Soc. 43: 450. 1960.

Our South American material has the following characteristics:

Pileus rather deep reddish brown, especially at center ("leather br." to "Mohawk", "kis kilim", "terrapin", center reaching "Liberia" M & P), finely fibrillose-squamulose to minutely fibrillose excepting the center, more rarely subglabrous to glabrous, not viscid, at times in parts exoriate-lacerate with brown fibrils on whitish ground, or at least towards the margin finely rivulose, not striate or sulcate, or very short-sulcate in some old caps, convex, often with a very small and very low and obtuse umbo, but just as often completely obtuse, becoming depressed in the center, or applanate, eventually sometimes concave, 23–60 mm broad.—Lamellae white, more rarely cream-white, may assume a greenish-wax-color tint while drying, close, even crowded, generally ventricose, medium broad to broad, free and mostly somewhat remote.—Stipe white, glabrous, smooth, equal, at least down to the middle, lower part frequently thickened or bulbous, 30–48 × 5–10 mm, at base, 2.5–9 mm at apex; annulus fixed, membranous, funnel shaped but not very wide, white with pale cinnamon ocher, dirty orange cinnamon or brown line or band

at rim of annulus, the latter superior, more rarely mediane or inferior.—Context white, at times slightly yellowish in drying material, otherwise and generally unchanging, fleshy, fragile in stipe; odor none or slight and insignificant.

Spores 6.5–7.5 × 4–4.5–(5) μ, ellipsoid but frequently with narrowed upper third but obtuse on both ends, with rather firm to slightly thickened wall which is smooth, pseudoamyloid, with 0–2 droplets, in cresyl blue mounts pink-metachromatic along the endosporium.—Basidia 4-spored. Cheilocystidia variable in shape and size. Cystidia on sides of lamellae, none.—Hyphae without clamp connections.—Epicutis consisting of repent or interwoven hyphae which are rather elongated and beset with brownish pigment incrustation and/or membrana pigment, in some areas—a trichodermial structure evident, with terminal members of hyphae 6.5–10.5 μ broad, broadly rounded at tip, and with occasionally slightly thickened wall.

On the ground under leguminous, myrtaceous trees, also under *Aextoxicum*. Fruiting in spring and fall.

Material studied: ARGENTINA: Corrientes: Curuzú Cuatiá, 7–XI–1965, Singer S 563 (BAFC).—CHILE: Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6534 (SGO).—M 6519 (SGO).

There is a colored plate of this species in Reid, Col. Icon. rare inter. fungi 2: 2. text fig. 7, pl. 9 (a), 1967.

Agaricus

AGARICUS XANTHODERMUS Genev., Bull. Soc. Bot. Fr. 23: 31. 1876.

Description and illustrations and synonymy see Pilát, Acta Mus. Nat. Pragae 7B: 116, 1951 and also Møller, Friesia 4: 168. 1952. An almost cosmopolitan species, probably adventicious originally. Not common in the southern part of the region.

AGARICUS ARVENSIS Schaeff. ex Fr., Syst. Mycol. 1: 282. 1821.

Description and illustrations and synonymy see Pilát, l.c. p. 83; Møller l.c. p. 161. Not uncommon.

AGARICUS PORPHYRIZON Orton, Trans. Brit. Myc. Soc. 43: 174. 1960.

Synoymy see there, a description see Møller l.c. p. 187.—Our material:

ARGENTINA: Neuquén: Rincón, 13–III–1963, M 3525–L. Correntoso, 9–IV–1963, M 3357 (BAFC).

AGARICUS XANTHOLEPIS (Møller) Møller l.c. p. 204.

Description see there, p. 191.

Our material comes from CHILE: Valdivia: Hueycolla, 4–V–1967, M 6678 (SGO).

AGARICUS CAMPESTRIS L. ex Fr., Syst. Mycol. 1: 281. 1821.

Description see Møller, l.c. p. 56. Very common all through the region, and sold in the Chilean markets.

Agaricus nebularum Sing. spec. nov.—Pileo griseo ("acorn" M & P), appresse fibrilloso et in zona marginali carnem albam plus minusve denudante, sed in centro subtomentoso glabrescente integro et uniformiter atrogriseo, convexo, obtuso, 23–26 mm lato.—Lamellis roseis dein pallide griseis, demum (e sporis) castaneo-sepiaceis et satis atris, confertis vel confertissimis, angustis, liberis.—Stipite albo, sordescente siccando, glabro et levi sub annulo, farcto, subaequali, basin versus vel prope basin incrassato, sed haud bulboso, 33–40 × 3–6.5 mm; annulo supero, sed siccando vel in senilibus mobili, levi, in parte inferiore glabro et nudo, sed marginem versus spisso-duplici-bimarginato, membranaceo.—Contexto albo, in vegetis junioribus praecipue in stipitis cortice rubescente, demum luridescente-sordido; odore amygdalino debili.— Sporis 5.5–6.5 × 4 μ, late ellipsoideis vel ovoideis vel ellipsoideis, levibus, poro germinativo destitutis, purpurascente-sepiaceis, bene pigmentatis, praesertim minoribus.—Hymenio e basidiis constante, basidiis 5.6–6.5 μ latis, tetrasporis. Cheilocystidiis a basidiolis paullum differentiatis, 6.5–8 μ latis, melleis vel hyalinis, clavatis, sparsis vel moderatim numerosis.—Hyphis defibulatis. —Ad terram et humum in silva sub Aextoxico in zona nebulis humectata. Typus: CHILE: Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6511 (SGO).

AGARICUS MEDIOFUSCUS (Møller) Møller, l.c. p. 203.

Description and illustration see Møller l.c. p. 30. We shall describe our material separately:

Pileus fuscous ("olive wood", "brown sugar" M & P) because of the fibrils which are coarse and appressed in the marginal zone where they often appear on a more or less visible paler ground color, more densely covering the central portion where they often form squamules which are strictly appressed, convex, then often applanate, eventually often concave, 90–95 mm broad.—Lamellae pinkish flesh-color, then deep chocolate color, narrow to rather broad (to 7 mm), close, sometimes forked, free.—Stipe white, then becoming bister silky ornamented with appressed fibrils, glabrescent and darkening in age, equal or gradually

tapering upwards, without a bulb, hollow, 73–116 × 16–24 mm; annulus white, simple or with fine brownish fibrils on underside, smooth otherwise, with simple margin, membranous, darkening in age and pendulous. —Context white, reddening slightly to strongly where bruised, sometimes more so in the pileus, sometimes in the stipe, thin in the marginal zone of the pileus, fleshy; odor none.

Spores 7.5–8.8–(10) × 4–4.3 μ, ellipsoid to oblong, some exceptional spores nearly bolete-like, dark sepia, purplish sepia, smooth, without a germ pore.—Basidia 15–27 × 7–7.5 μ, 4-spored, ventricose or clavate, hyaline to melleous. Cheilocystidia numerous among the basidia on the edges, 25–33 × 9–12 μ, ventricose to ventricose-clavate, obtuse.—Hyphae without clamp connections (basidia not clamped either).

KOH on reddened flesh: discoloring to whitish; on pileus surface: negative; $FeSO_4$: green.

Near trees on the ground in semi-open or shaded places, fruiting in summer and fall.

Material studied: ARGENTINA: Tierra del Fuego: Est. Nueva Argentina, 14–II–1950, Singer M 268 (LIL).—CHILE: Valdivia: Hueycolla, 4–V–1967, Singer M 6671 (SGO).

AGARICUS VALDIVIAE Sing., in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 161. 1965.

Description see there.

AGARICUS spec. (? = *Stropharia chilensis* Speg., Bol. Acad. Nac. Cord. 25: 19.-1921).

The type from Chile: Malleco: Victoria, May 1918, leg. J. A. Campo, has sepia colored spores 5–7 × 3.3–4 μ without germ pore and no cystidia, but apparently cheilocystidia.

We have similar material which closely corresponds to Spegazzini's description and which may be identical. It belongs apparently to the difficult *Xanthoderma* group. The fibrillose appressed small scales are gray-brown when fresh and gray-black when dried. The lamellae are dirty livid, close, the context is white and unchanging in the pileus, odor of *Cantharellus cibarius*, later of dried mushrooms; annulus not always scaly but with double rim; stipe white, becoming lemon yellow when touched but the yellow spot becoming eventually chestnut-purple. The base is subbulbous or slightly curved, both pileus and stipe reaching 10 cm. The spores are as in Spegazzini's type, basidia 4-spored; cheilocystidia versiform, often club shaped, 20–26 × 5–7.5 μ, often mucronate, no clamp connections present.—ARGENTINA: Buenos Aires: San Fernando, 25–XII–1966, group under trees on earth, Singer S 900 (BAFC).

Since there is no certainty that this does not belong in a species described previously, we shall not propose a nomen novum (*Agaricus chilensis* is preoccupied) at present.

AGARICUS BISPORUS (Lange) Imler, the cultivated white mushroom, often escapes from mushroom houses, but is not native in our region.

Melanophyllum

MELANOPHYLLUM ECHINATUM (Roth ex Fr.) Sing., Lilloa 22: 436. 1951.

For a good description see Melzer, Česká Mykologie 8: 86. 1954.

Our material corresponds exactly with this description and is in every regard typical.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 22–IV–1964, Singer M 3393 (BAFC).—Ample material from Europe, North America including types of *Agaricus haematophyllus* Berk., *A. olivaesporus* Ell. & Ev. etc.

Cystolepiota

Cystolepiota australis Sing. spec. nov.—Pileo albo, centro pallide cinnamomeo-brunneo ("cork" M & P vel ex integro pallido vel sordide carneo-brunneolo, flocculoso-verruculoso (molli-tomentosule), sed interdum minutissime ornamentato ita ut macroscopice glaber appareat, centro interdum glaberrimo, haud viscido, convexo, demum saepe centro leniter depresso, obtuso vel subumbonato, 14–22 mm lato.—Lamellis albidis vel pallidis, interdum pallide carneo-brunneolis et exsiccatione subbrunnescentibus, confertis, subangustis, interdum mediocriter latis, liberis.—Stipite albo, ornamentatione ei pilei simillima praedito vel pruinato, aequali vel subaequali vel basin versus leniter incrassato, 28–41 × 1.5–3 mm; velo membranaceo, albo, ad marginem pilei saepe appendiculato, subflocculoso, in stipite annulum fugacem formante, interdum annulo haud formato.—Contexto albido, fracto haud mutabili sed demum pileo concolori; odore nullo vel ei Lepiotae cristae simili.—Sporis 3–5.5 × 2–3 μ, ovoideis vel cuneiformibus, latioribus ad hilum et angustato-obtuso ad apicem, interdum oblongo-subcylindraceis, levibus, inamyloideis.—Hymenio: Basidiis 14–16 × 5.3–5.5 μ, tetrasporis. Cystidiis ad latera et ad aciem lamellarum numerosis, ventricosis, nonnullis breviter mucronatis et ex ea re acutis, ceterum obtusis, tenui-tunicatis, 18–30 × 6.5–10 μ, interdum subfusoideis, hyalinis vel pallide flavo-brunneolis, saepe tenuissime incrustatis, inter-

dum contentu granuloso-guttuloso gaudentibus, in solutionibus azurei cresylici caeruleis gloeocystidiorum modo. Cheilocystidiis pleurocystidiis similibus, sed usque ad 35 × 6 μ, cylindraceo-fusoideis vel fusoideis, pleurocystidiis acieies intermixtis.—Hyphis fibulatis, inamyloideis, sed interdum septis secundariis defibulatis praesentibus.—Epicute pilei e strato crasso epithelii modo e sphaerocystis 26–80 μ (plerumque ± 45 μ) diam. levibus pallidissime melleo-ochraceis efformato et in flocculos diffracto constante. Sphaerocystis superficialibus in stipite etiam praesentibus.—Ad terram et humum solitario in silvis mixtis Nothofagorum dombeyi cum Austrocedros aut cum Saxegothaea, autumno. Typus: ARGENTINA: Neuquén: Camino del Brazo Blest a los Cántaros, 23–III–1963, Singer M 3153 (BAFC).—Paratypus: Puerto Manzano, 22–IV–1964, Singer M 3407 (BAFC).

Cystolepiota rosea Sing. spec. nov.—Pileo roseo ("rose leaf") vel albo, centro roseo ("Japan rose" M & P) vel pallide cinnamomeo-rosello, exsiccatione in centro pallide alutaceo-cinnamomeo, subtiliter farinoso-submicaceo vel subgranulari, interdum subtilissime ita ut macroscopice glaber appareat, levi, margine interdum crenulato, campanulato-convexo, umbonato, subumbonato vel exumbonato, 5–16 mm lato, 3.5–8 mm alto. —Lamellis albis, confertis, mediocriter latis, liberis.—Stipite albo, apicem versus subtiliter farinoso vel granulari, levi, aequali, 20–40 × 0.5–2 mm; velo albo, fugaci.—Contexto albo, inodoro.—Sporis 5.3–6.8 × 3–3.3 μ, ellipsoideis vel oblongis vel cylindraceis, hyalinis, levibus, inamyloideis.—Hymenio: Basidiis 16–21 × 6–6.5 μ, clavatis, tetrasporis. Cystidiis nullis; cheilocystidiis nullis sed interdum nonnullis sphaerocystis ad aciem lamellarum adhaerentibus.—Hyphis fibulatis, inamyloideis.—Epicute pilei epithelio crasso repraesentata quod e sphaerocystis 16–33 μ diam. tenuitunicatis hyalinis efformatum est.—Ad humum nec non ad truncum putridum in silvis, autumnalis. Typus: ARGENTINA: Neuquén: Puerto Manzano, Río Bonito, 6–IV–1963, Singer M 3292 (BAFC).—Paratypus: CHILE: Valdivia, Hueycolla, 4–V–1967, Singer M 6714 (SGO).

Cystolepiota marthae Sing. spec. nov—Pileo supra fundum album vel albidum dense ochraceo-cinnamomeo vel brunneo punctato e squamulis lanosis minutissimis flocculosis quae in centro interdum tam confertae sunt ut superficies glabra continuaque appareat, haud viscido, convexo, interdum partim applanato umbone humili obtusque praedito vel destituto, 10–21 mm lato.—Lamellis albis, confertis, latis vel satis angustis, acie integris, liberis.—Stipite albo apicem versus, albo vel rubescente-brunneolo in parte centrali, basi concolori vel fuscescente, minutissime furfuraceo-fibrilloso sub lente, sed glabrescente vel nudo in senilibus, sub-

aequali vel leniter apicem versus attenuato, 42–50 × 1.5–2.5 mm; velo admodum fugaci.—Contexto albo, immutabili, odore Lepiotae cristae vel nullo.—Sporis 3.5–5 × 2.3–3 μ, subcylindriaceis vel ellipsoideis, hyalinis, inamyloideis, levibus.—Hymenio: Basidiis 14–20 × 5–5.5 μ, tetrasporis. Cystidiis et pseudocystidiis nullis, sed cheilocystidiis exiguis, versiformibus (saepe ventricosis, haud mucronatis vel appendiculatis, hyalinis) e.gr. 15 × 6.5 μ interdum praesentibus.—Hyphis fibulatis, inamyloideis, septis secondarii (haud fibulatis) interdum numerosis.—Epicute pilei (i.e. squamulis pilei) e sphaerocystis in KOH brunneolis, globosis vel ellipsoideis, 25–72 μ diam. efformata.—Ad humum et terram in silvis. —Typus: ARGENTINA: Neuquén: Quetrihué, 7–IV–1963, leg. Martha Singer & José Diem, comm. Singer M 3296 (BAFC).—Paratypus: CHILE: Valdivia: Cuesta Santa Elvira, 15–V–1967, Singer M 6914 (SGO).

Lepiota

LEPIOTA ASPERA (Pers. ex Fr.) Quél., Enchir. p. 5, 1886.

Pileus pyramidally flocconous-scaly, almost spiny, the floccons or spines ochraceous brown or golden brown (12–B–8 to 13–F–9, M & P) with pallid tips, especially strongly ornamented in the middle of the pileus, at times becoming ruptured and scales enough separated from each other to show white flesh, or naked in certain areas, dry, convex, then applanate, often umbonate but never acute, up to 100 mm broad.—Lamellae white, crowded, some forked, often crenulate at edge, rather narrow, free.—Stipe concolorous with pileus or slightly paler, often with white apex, browning where touched and in age, scaly-flocconous as in the pileus, but scales often in concentric belts (which are, however incomplete), dry, with conspicuously thickened base, 70–110 × 3.5–8 mm, at base up to 27 mm broad; veil well developed and annuliform in adults, annulus distant, eventually appressed, white with brownish edge zone.—Context white, with odor like *Lepiota cristata*.

Spores 6.5–8.7 × 2.5–3.5 μ, cylindric to fusoid, sometimes cuneiform-obclavate, hyaline, smooth, pseudoamyloid.—Basidia 18.5–20 × 5.2–5.8 μ, 4-spored. Cystidia none; cheilocystidia 12.5–18 × 8–10.5 μ, vesiculose to broadly clavate, rarely with on oblique mucro.—Hyphae with clamp connections.—Epicutis of pileus (scales) formed by a trichodermium of mostly elongated elements but many of these may be shortened-ventricose, and a minority is always present, especially towards the upper part of the floccons, that are sphaerocystoid or subisodiametric (14–25 × 9–19 μ), otherwise 3–14 μ broad; pigment rusty-ochraceous brown, membranal and incrusting.

On strongly rotten wood and woody humus, also directly on forest litter solitary or in groups.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 3–IV–1963, Martha Singer no. 16 (BAFC).—Rincón, 13–III–1963, Singer M 3523 (BAFC).—Also type (L), cf. Persoonia 2: 9. 1961.

LEPIOTA CRISTATA (Alb. & Schw. ex Fr.) Kummer, Führ. Pilzk., p. 137. 1871.

This common species is described by several authors in the modern European literature. Our material does not differ in any important aspect.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 900 m alt., 8–IV–1963, Singer M 3335 (BAFC).—22–IV–1964, M 3449 (BAFC).—Rio Negro: Lago Nahuel Huapí, near Sta. María, 30–IV–1964, Singer M 3718 (BAFC).—CHILE: Santiago: Quebrada de la Plata, near Maipú, 24–VI–1966, W. Lazo RI-3 (SGO).—Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6520 (SGO).—FRANCE: Chaillet no. 71, autumn, in Persoon Herbarium as *Agaricus colubrinus* (L).—U.S.S.R: Altai, Artybash, 16–IX–1936, Singer A 408 (LE).—Kurai, 31–VII–1936, Singer (LE).—Also numerous European collections.

LEPIOTA SUBGRACILIS Kühner, Bull. Soc. Mycol. Fr. 52: 231. 1936.

Description and illustration see there. Our material coincides with that of the type description in every particular.

Material studied: ARGENTINA: Neuquén: Lago Correntoso near Arroyo Frutillas, under *Nothofagus antarctica*, 9–IV–1963, Singer M 3351 (BAFC).—Rincón, 18–III–1963, Singer M 3069 (BAFC).—Arroyo Frutilla, 22–IV–1965, Singer M 5205 (BAFC).

LEPIOTA LOCANIENSIS Espinosa, Bol. Mus. Nac., Santiago, 15: 81. 1936, as *L. locañensis*.

As for the macroscopical description and illustration, see Espinosa, l.c. Spores 8.5–10 × 4–5.3 µ, oblong to subcylindric or ellipsoid, without apical germ pore, without spur, not metachromatic in cresyl blue mounts, hyaline in NH_4OH, pseudoamyloid, smooth.—Basidia 4-spored. Cheilocystidia 11–24 × 5.5–15 µ, vesiculose-clavate to ventricose with broadly ampullaceous neck, hyaline, numerous.—Hyphae with clamp connections, inamyloid.—Epicutis of pileus consisting of a trichodermium which is composed of elongated elements in chains, terminal member mostly clavate to ampullaceous, acute or rounded obtuse at tip, without incrusting pigment, 30–60 × 11–14 µ.

On the ground in semiarid vegetation, fruiting from April until June.

Material studied: CHILE: Santiago: Los Cañas, leg. J. Mardón, June 1935 (SGO), typus.—Melipilla, 27-IV-1943, Espinosa leg. (SGO).

Lepiota subcortinaria Sing. spec. nov.—Pileo aurantiaco vel aurantio-brunneo, squamulis minutis (sub lente bene visibilibus) subacutis in centro, lanosis nec acutis in zona marginali munito, his interdum detersilibus, convexo, subumbonato vel umbonato; ± 30 mm lato; velo albo cortinoideo late appendiculato.—Lamellis albis vel cremeis, sat latis, confertis, liberis.—Stipite albido sed apice excepto toto fragmentis fibrillosis pileo concoloribus obsito, aequali, 35–55 × ± 3 mm; velo fragmentario annuliformi ecortinoideo interdum evoluto, sed plerumque exannulato in adultis.—Contexto albo.—Sporis 6.5–7.3 × 3.7 μ, ellipsoideo-oblongis, parte inferiore aut truncatis aut non truncatis, hyalinis, levibus, pseudoamyloideis.—Hymenio: Basidiis 28–28,5 × 7.3–8 μ, tetrasporis. Cystidiis nullis; cheilocystidiis 19–24 × 5–10.3 μ, vesiculosis et pedicellatis, hyalinis.—Hyphis fibulatis, inamyloideis, sed in subhymenio subpseudoamyloideis (reactione debili).—Epicute pilei (squamulis) e catenis fasciculatis hypharum efformatis, pigmento membranali et intracellulari brunneolis, hoc dissoluto, efformato; membris terminalibus 55–105 × 8–16 μ, cylindraceis vel ventricosis vel claviculari-subcapitatis (rarius), apice rotundato-obtusis vel acutis, piliformibus vel cheilocystidiis comparabilibus.—Ad terram in silva Austrocedri chilensis. Typus: ARGENTINA: Rio Negro, prope Santa María (Lago Nahuel Huapí), 19–IV–1965, Singer M 5055 (BAFC).—Lepiotae fuscosquameae (Peck) Sacc. affinis.

Lepiota neuqueñensis Sing. spec. nov.—Pileo albo sed in centro fuligineo ("moose"), in fibrillis marginalibus atrocastaneo-fuliginoso ("Hindu" M & P), haud squamoso, centro subvelutino, in zona marginali ampla appresse fibrilloso tantum, convexo, centro dein applanato, demum irregulari, 16 mm lato vel latiore.—Lamellis albis, confertis, mediocriter latis, liberis.—Stipite albo supra annulum, fibrillis eis pilei concoloribus subtus ornato, aequali, sed ad basin subbulboso vel bulboso (hic ± 8 mm diam.), ± 50 × 5 mm; velo annuliformi simpici, albo, levi, lato, horizontali in adultis.—Contexto albo, inodoro.—Sporis 7.5 × 4 μ, ellipsoideis, hyalinis, levibus, pseudoamyloideis, in solutione azurei cresylici haud metachromaticis, poro germinativo omnio destitutis.—Hymenio: Basidiis 25 × 7–8 μ, tetrasporis. Cystidiis nullis; cheilocystidiis numerosis, 57 × 15 μ, ventricosis, obtusis.—Hyphis defibulatis (ita ut basi basidiorum).—Epicute e trichodermio in parte centrali consistente quod ex hyphis intus brunneofuscis, late rotundatis, elongatis, septatis, 7.5–8.5 μ latis efformatum est.—Ad humum in silva mixta, autumno. Typus: ARGENTINA: Neuquén:

Puerto Manzano, 22–IV–1964, Singer M 3425 (BAFC).—Lepiotae felinae affinis, sed Leucoagarico atrofibrilloso similis.

Lepiota patagonica Sing. spec. nov.—Pileo albo, centro cremeo-grisello, exsiccatione carneo-cinnamomeo (12–C–9, M & P), subglabro, sub lente in centro hispido-fibrilloso, circum centrum fibrilloso fibrillis hispido-erectis vel appressis sparsis in fundo albo, in centro sublanoso et umbone exiguo praedito, levi (sed in exsiccatis saepe lenissime sulcatis ad marginem tantum), extra umbonem convexo et dein applanato, 12–13 mm lato.—Lamellis pallidis, subconfertis, latis, simplicibus, liberis.—Stipite albido, subglabro et sub lente manifeste fibrilloso ita ut pileus et ex ea re haud levi, apicem versus leniter attenuato, haud bulboso, 19–20 × 0.8–1.2 mm; annulo fugaci.—Contexto albo, inodoro.—Sporis 6.7–8.3 × 3.7 μ, fusiformibus, levibus, hyalinis vel pallide stramineis in ammoniaco, pseudoamyloideis.—Hymenio: Basidiis tetrasporis. Cystidiis nullis; cheilocystidiis 30–34 × 9.8–16.5 μ, vesiculosis et saepe pedicellatis, aut ventricosis, nonnullis acuminatis sed plerumque late rotundatis, obtusis, hyalinis.—Hyphis defibulatis.—Epicute pilei trichodermium repraesentante, ex elementis elongatis et paucis subisodiametricis omnibus ± 7–7.5 μ diametro, pallide brunneolis (NH_4OH) consistentibus.—Ad humum solitario in silvis mixtis, autumno. Typus: ARGENTINA: Rio Negro: Laguna Frías, 2–V–1964, Singer M 3847 (BAFC).

Pseudobaeospora

PSEUDOBAEOSPORA CHILENSIS Horak, Rev. Mycol. 29: 76. 1964. Description see there.

Pseudobaeospora flavescens Sing. spec. nov.—Pileo pallide flavo, levi, glabro et haud squamoso, convexo, ± 6 mm lato.—Lamellis dilute flavis, moderatim confertis, angustis, subliberis.—Stipite pallide flavo, nudo, levi, glabro sed ad apicem furfuraceo-pruinoso, aequali, ± 22 × 1 mm; velo nullo aut inconspicuo, stipite exannulato.—Contexto pallide flavidulo, immutabili, inodoro.—Sporis 4–5 × 3–4 μ, breviter ellipsoideis, levibus, hyalinis, saepe leniter cremeis in ammoniaco, pseudoamyloideis sed nonnumquam nonnullis inamyloideis.—Hymenio e basidiis tantum efformatis, basidiis 23–24 × 4.5–6 μ, (3)–4-sporis. Cystidiis et cheilocystidiis nullis.—Hyphis inamyloideis, haud gelatinosis, fibuligeris.—Epicute pilei cutem repraesentante, ex hyphis filamentosis subparallelis repentibus hyalinis efformata.—Ad humum in silva nebulis tantum humectata.—Typus: CHILE: Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6525 (SGO).

PSEUDOBAEOSPORA SERENA (Fr.) Locquin, Bull. Soc. Mycol. Fr. 68: 169. 1952.

Agaricus serenus Fr., Hymen. Eur. p. 38. 1874.

Pileus white, glabrous and smooth, or scarcely silky, but eventually excoriate and becoming roughened by fine scales, in many specimens, at least in part of the surface, dried pallid, not sulcate or pectinate, not pruinate, low-campanulate, then convex, and eventually somewhat applanate, 15–27 mm broad.—Lamellae white, dried cream-pallid, close to crowded, narrow, more rarely medium broad, free.—Stipe white, smooth, glabrous, obclaviform, 30–43 × 1.3–2.5 mm (at apex), × 4.5–5 mm at base; veil annuliform in adult specimens, annulus white, thin-membranous to membranous, funnel-shaped to pendulous, apical, smooth. —Context white, unchanging, inodorous.

Spores 5.2–7.5 × 3–4 μ, broadest at hilar end, but not distinctly truncate there, even less spurred, tapering gradually in upper third to an obtuse, rarely subacute tip, with continuous wall (no germ pore of any sort!), hyaline, with a round or elongated oil drop, pseudoamyloid.—Basidia 13–24 × 8–9 μ, subclavate to ventricose, 4-spored, without basal clamp. Cystidia and cheilocystidia 29–48 × 10–12.5 μ, scattered to fairly numerous on edge and rather rare to absent in the vicinity of the edge, not further away from the edge, subcylindric to ventricose or ventricose-clavate, with broadly rounded tip, thin-walled, entire, hyaline, inamyloid. —Hyphae without clamp connections, not or perhaps extremely slightly pseudoamyloid, not gelatinized. Hymenophoral trama of elongated hyaline hyphae, rather regular.—Epicutis of pileus—a cutis of repent hyphae which are smooth and somewhat narrower and more elongated than those of the trama.

On the ground in woods dominated by *Nothofagus obliqua* or *N. nitida*, probably also other genera of trees, fall-fruiting.

Material studied: CHILE: Valdivia: 10 km N of Colaco, 9–V–1967, Singer M 6817 (SGO).—Cuesta Santa Elvira, 15–V–1967, Singer M 6920 (SGO).

Kühner & Romagnesi (Flore anal. Champ. Sup. p. 403. 1953) imply that this species belongs to those where the endosporium is dyed metachromatically in cresyl blue solutions. We find no metachromatism in cresyl blue mounts in any of the spores in the collections of this species reported above. Otherwise this seems to be clearly this species in the sense of Kühner (Bull. Soc. Mycol. Fr. 52: 213. 1936) excepting the cheilocystidia which Kühner perhaps describes as pseudoparaphyses, but which are much smaller in Kühner's material than they are with us.

CYSTODERMA AMIANTHINUM (Scop. ex Fr.) Fayod, Ann. Sc. Nat. VII. 9: 351. 1889.

Our South American form is very close to the type form and differs only in two, rather unimportant features: (1) the pileus is neither always smooth nor is it always rugose as in f. *rugosoreticulatum*, but is variable in this regard having frequently but not persistently a radially rugose zone somewhere between the center and the margin, (2) the spores are slightly broader than in both f. *amianthinum* and f. *rugosoreticulatum* as well as in var. *sublongisporum*, but shorter than in var. *longisporum*.

Material studied: ARGENTINA: Tierra del Fuego: Estancia Nueva Argentina, 14–II–1950, Singer M 275 (LIL).—CHILE: Osorno: Volcan Osorno, at 900 m alt., in open place on volcanic sands, 12–V–1967, Singer M 6851 (SGO).—BOLIVIA: La Paz: Nor-Yungas, Cotapata, 3000 m alt., in *Polytrichum*, 2–II–1956, Singer B 820 (LIL).

Cystoderma austrofallax Sing. spec. nov.—Pileo ferrugineo ("talavera" vel 4–A–12, M & P), ad flavo-luteum vergente ("corn" to "golden glow" M & P) marginem versus, macroscopice subglabro in humidis sed in siccis et exsiccatis sub lente subtiliter et uniformiter granulari sed haud squamoso, leniter rugoso in zona inter centrum et marginem intermedia, ceterum levi, campanulato, dein conico-applanato, fortiter umbonato, 11–33 mm lato.—Lamellis albidis vel leniter alutaceo-pallidis, in siccis alutaceo-albidis sine tintis roseis, confertis, angustis vel moderatim latis, sinuatis et anguste adnexis.—Stipite pileo concolori, sed pallidiore ("corn" vel "daffodil" M & P), aureo ("nugget" M & P) infra apicem, floccoso-granulari vel floccoso-subsquamuloso (flocculis brunneis: "Yucatan" vel "Peruvian" br. M & P) infra annulum, nudo vel pallide appresse sericeo supra annulum, aequali vel leniter attenuato apicem vel basin versus, 22–45 × 2–6 mm; annulo bene evoluto et persistente, sed angustiore, magis floccoso-granulari, quam in Cystodermate fallaci, demum fragmentario; rhizomorphis albis nullis.—Contexto in partibus peripheric is subconcolori superficiebus, immutabili, carnoso; odore debili, haud iucundo.—Sporis (3.5)–4–5 × 3 μ, ovoideis, levibus, fortiter amyloideis (violaceis), in KOH hyalinis vel flavidulo-hyalinis.—Hymenio e basidiis tantum consistente. Basidiis 17–22 × 5–6 μ, tetrasporis. Cystidiis et cheilocystidiis nullis.—Hyphis fibulatis, in subhymenio et in strato supralamellari ex elementis minutis consistentibus et hyalinis, in tramate hymenophorali regulari filamentosis, subintertextis, hyalinis, inamyloideis. —Epicute pilei epithelium repraesentante, crassa, in aqua chromeo-flava, in KOH intense aurantio-ferruginea, e cellulis 16–32 μ diam., pigmento

membranali instructis, polystratis (paucis ellipsoideis vel cylindraceis) efformata; hypodermio cutem repraesentante, pigmento identico instructo (sed hyphis tramatis pilei hyalinis in KOH).—Structura tegumenti stipitis simili.—KOH reactionem rubro-brunneum ("caldera" M & P) in pileo sicco evocat, sed haud nigram.—Gregatim ad truncos delapsos in silva Aextoxicis, Eucryphiis, Podocarpis dominata, ad detritum silvestrem in truncum lapsum et inter rhizomorphas nigras alii organismi fungici (Armillariellae?). Typus: CHILE: Valdivia: Prope Hueycolla, 200 m alt., 4–V–1967, Singer M 6682 a (SGO).—*C. fallaci* affinis.

COPRINACEAE

Coprinus

COPRINUS DESERTICOLA Speg., Ann. Mus. Nac. Bs. As. 6: 156. 1899.
Description see there.

COPRINUS COMATUS (Muller in Fl. Dan. ex Fr.) S. F. Gray, Nat. Arr. Brit. Pl. 1: 632. 1821.
Descriptions and illustrations numerous in the current European and North American literature. Rather common in our region, especially in woods where there has been influence of human activity.

COPRINUS ATRAMENTARIUS (Bull. ex Fr.) Fr., Epicr. p. 243. 1838.
Descriptions and illustrations numerous in the current European and North American literature. Common in our region, with numerous collections by this author and others, all perfectly in agreement with the European plant in its typical form.

COPRINUS PSAMATHONOPHILUS Speg., An. Mus. Nac. Bs. As. 6: 156. 1899.
Description and illustration in Singer, Mycopath. & Mycol. Appl. 34: 131. 1968.

COPRINUS AURICOMUS Pat., T. An. F. 5: 200. 1886.
Description see Bull. Soc. Mycol. Fr. 50: 53, 1934.–Our material came from ARGENTINA: Neuquén, V. Angostura, Selva Triste, 16–IV–1965, Singer M 5028 (BAFC).

COPRINUS ANGULATUS Peck, 26th Ann. Rep. N. Y. St. Mus. p. 60. 1874.

C. boudieri Quél., Bull. Soc. Bot. Fr. 24: 321. 1877.

Material studied: ARGENTINA: Neuquén, V. Angostura, Selva Triste, 16–IV–1965, M 5028 a (BAFC).

COPRINUS LAGOPIDES Karst., Symb. Myc. fenn. IX, Helsingfors Meddel. 9: 48. 1882.

A description of this species was given by Orton, Trans. Brit. Mycol. Soc. 40: 268. 1957.—Our material (ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, on burned earth, 23–XI–1964, Singer M 4077, BAFC) coincides best with the description of Métrod, including spores (ours: 7.5–9 × 5.7–6.8 μ) and habitat (both with *Funaria*), see Bull. Soc. Mycol. Fr. 53: 346. 1937. Our material has (2)–(3)–4-spored basidia and hyphae with clamp connections.

Coprinus carbonicola Sing. spec. nov.—Pileo colore C. micacei gaudente, particulis brunneolis furfuraceis e tomento disrupto ortis velaribus ornato, pectinato-sulcato, subrimoso, per 3/4 radii pilei, centro levi, campanulato, 20–27 mm lato, 21–24 mm alto.—Lamellis nigris, siccis ferrugineo-atris, confertis vel confertissimis, sat angustis vel angustis, haud ventricosis, liberis, libenter deliquescentibus.—Stipite albo, glabro, aequali vel leniter apicem versus attenuato, 55–60 × 2–4 mm.—Contexto albo, tenuissimo, inodoro.—Sporis 6–8.7 × 4.7–5 × 4.–4.5 μ, moderatim vel manifeste lentiformibus, ad interius latus leniter concavis vel applanatis, ellipticis frontaliter, levibus, intense fuscis, poro germinativo apicali centrali late truncato instructis.—Hymenio: Basidiis ± 14 × 6.7 μ, pseudoparaphysibus ± 18 × 12.5 μ.—Hyphis defibutalis.—Epicute infra tegumentum velare strato cellulari (elementis pallide ochraceis breviter clavatis, breviter cylindraceis, subglobosis, e.gr. 23 × 16.5 μ, membrana 0.2–0.8 μ crassa instructis, levibus) consistente; tegumento velari ex elementis laxe dispositis sed haud gelatinisatis, intertextis filamentosis, membrana 1.2–1.8 μ crassa instructis, brunneo-fulva pigmenti membranalis causa, membro terminali plerumque evoluto differentiatoque (interdum duobus terminalibus differentiatis), dilatatis ventricosulis vel late fusoideis, saepe mucronatis, obtusis, rarius acutis, incrustatione hylina supra membranam fulvam superimposita gaudentibus, 31–90 × 11–24 μ; membris antecedentibus filamentosis 5.8–7.3 μ diam.—Ad carbones vegetales in silva usta, autumno. Typus: ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 7–V–1964, Singer M 3975 (BAFC).—Paratypus: 27–IV–1965, Singer M 5318 (BAFC).

COPRINUS BULBILLOSUS Pat., Tab. anal. F. 658, 1889.

Description see Revue de Mycologie 10: 80. 1945, as *C. ephemeroides* (as this species is often called, but the type description and Bulliards illustration not determinable with full security).

Our material, with spores 8.5–10 × 6.7–8.5 × 5.3–5.8–(6.5) μ, fuliginous and scarcely transparent, smooth, lentiform, with germ pore; with an annular inferior belt on stipe. On dung, CHILE: Valdivia: Cordillera Pelada, 29–III–1963, Singer M 3233 (BAFC).

COPRINUS PATOUILLARDII Quél apud Pat., Tab. anal. 3: 107. 1884.

Description see l.c. and compare Ann. Soc. Linn. Lyon 77: 103. 1933 (as *C. cordisporus* Gibbs, a synonym) and Kühner & Romagnesi, Fl. an. Champ. Sup. p. 384, 1953.—Our Chilean material (Colchagua: Pumanque, 14–VI–1967, W. Lazo PU-60 (SGO)) has heart-shaped to indistinctly hexagonal (in frontal view) spores, which are almost black, 11.5–13 × 10–10.2 × 7–7.5 μ, elliptical in side view, and derived from 2-spored basidia. Clamp connections absent. The 4-spored form has thus far not been observed in Chile.

Coprinus hypsizygus Sing. spec. nov.—Pileo griseolo-fuscidulo-pallido vel pallide griseo-fusco, furfuraceo particulis cinnamomeo-brunneolis vel ochraceo-brunneis, centro cinnamomeo-furfuraceo et tecto particulis concoloribus, longissime sulcato, ovoideo, 1.2–1.5 mm lato; 1.7–2 mm alto.—Lamellis albis, dein grisello-fuscidulis, ascendentibus, angustis, adnatis, confertis.—Stipite albo, particulis furfuraceis eis pilei similibus laxe tecto, siccando plus minusve brunnescente et glabrescente.—Contexto inodoro, tenuissimo.—Mycelio basali radiante, byssaceo, in siccis brunneo. —Sporis 7–8 × 4.5–5.5 μ, in KOH perisporio admodum hyalino-inflato tectis, ellipsoideis, episporio fusco, poro germinativo, superficie levi gaudentibus.—Hymenio: Basidiis tetrasporis. Cystidiis haud observatis. —Hyphis defibulatis, in stipite filamentosis, parallelis.—Epicute pilei stratum hymeniformem repraesentante, ex elementis vesiculosis eis veli minoribus, subhyalinis efformata. Tegumento velari e catenis sphaerocystarum atroferruginearum vel ochraceo-brunnearum, tenui-tunicatarum, membranis in membris inferioribus levibus, in superiore verrucosis, saepe subalate plicatis.—Primordiis 800 μ diametri Lycoperda echinata minutissima in mentem revocantibus, hymenio haud exposito, acystidiatis, stipite multum breviore diametro pilei.—Ad truncos Eucryphiae 2 m supra terram. Typus: CHILE: Valdivia: Cordillera Pelada, pendente occidentali, 480 m alt., 7–V–1965, Singer M 5576–5576 a (BAFC).

COPRINUS RADIANS (Desmazière) Fr., Epicr. p. 248. 1838.

Description in Bull. Soc. Mycol. Fr. 53: 126. 1937, as *C. similis*, compare also Kühner & Romagnesi, Flore anal. Champ. Sup. p. 383.

COPRINUS DISSEMINATUS (Pers. ex Fr.) S. F. Gray, Nat. Arr. Brit. Pl. 1: 632. 1821.

A description and illustration of this common cosmopolitan species can be found in M. Lange, Dansk Bot. Ark. 14: 128. 1952.

Coprinus uspallatae Sing. spec. nov.—Pileo griseo e floccis griseis basi pallida instructis, ad marginem albo, dein nigrescente, macroscopice subglabro, radiato-pectinato-subrimoso, conico-convexo apice obtusato, dein applanato margine recurvato, 7–17 mm lato.—Lamellis albis, dein gilvis, dein nigris, demum deliquescentibus angustis, confertis, liberis.—Stipite albo, subtiliter haud dense pruinato, mox glabrescente, aequali, subaequali, tubuloso, evelato, perfragili, 22–50 × 1.5–2 mm.—Contexto tenuissimo, albo, inodoro.—Sporis (10)–12–15–(18) × 8.5–11–(13) × 6.5–9–(10) μ, admodum versiformibus, plerumque ellipsoideis, breviter ellipsoideis, subrhombicis (visis frontaliter), lateraliter visis saepe tenuioribus et dilatationibus irregularibus praeditis, interdum cordiformibus, frequenter interius ad latus concavis, interdum fortiter allantoideis, crasse tunicatis, poro germinativo apicali centrali lato truncato instructis, rarissime subglobosis aut mucrone apicali praeditis, aut excrescentiis irregularibus deformatis, spadiceo-fuliginosis, levibus.—Hymenio: Basidiis 25–31–(50) × 9.3–12.7 μ, aut ex toto hyalinis aut membrana spadicea vel brunnea et granulatione solida intracellulari in parte superiore aut inferiore brunnea instructis, clavatis vel centro compressis, tetrasporis. Pseudoparaphysibus e.gr. 27–30 × 15–20 μ. Cystidiis haud observatis.—Hyphis hyalinis, in tramate hymenophorali regulariter dispositis, in stipite parallelis, sat tenuibus, fibulis destitutis.—Floccis pilei ex sphaerocystis et paucis hyphis filamentosis intermixtis, ambabus melleo-brunneolis, tenui-tunicatis, excrescentiis brevibus vel diverticulatione verrucosa e.gr. 2 μ projicientibus ornatis, sed sphaerocystis in medio acido plerumque levibus, membrana usque ad 0.8 μ crasso, plerumque tenuiore praeditis, 25–49 × 20–38 μ; hyphis 2–5 μ crassis.—Tegumento stipitis ex excrescentiis sparsis hypharum efformato, membro terminali ascendente vel erecto et saepe convoluto, levi vel noduloso, 4–6 μ crasso, hyalino vel pallide melleo, tenui-tunicato. –Ad terram ad latus canalium sub Salicibus, aestivalis. Typus: ARGENTINA: Mendoza: Uspallata, 2000 m alt., 14–I–1966, leg. Singer (BAFC).

Horak (Darwiniana 14: 372. 1967) mentions a *Coprinus patagonicus* Speg. which, in keys to the species of *Coprinus* of our zone might lead to *C. uspallatae* since the spores are also indicated as large (14.5–17.5 ×

8–10.5 μ) and the basidia granular with brown pigment contents. The description of *Coprinus patagonicus* is definitely deficient and its status doubtful. Moreover, any similarity with *Montagnea* as suggested by Horak's indications does by no means apply to *C. uspallatae*. For that reason we merely mention *C. patagonicus* here.

Coprinus saccosporus Sing. spec. nov.—Pileo cinereo-pallido, grisello, apice gilvo, subinnate furfuraceo floccis in siccis subochraceis, campanulato, 10–18 mm alto et 7–10 mm lato.—Lamellis nigris in adultis, acie pallidis, ascendentibus, sat latis, confertis, adnexis.—Stipite albo, basin versus in siccis subgilvo, uniformiter tomentoso usque ad apicem, fortiter bulboso, bulbo in siccis separato linea atra interna et inserto in substrato, velo manifesto nullo, 13–22 × 1.5–2.2 mm.—Contexto tenuissimo, albo, inodoro.—Sporis 11–13.5 × 7.5–8 μ, perisporio amplissimo laxe adhaerente saccato pallide brunneolo revestitis, ita ut sporae usque ad 16 × 10 μ mediant, infra perisporium leniter distanterque verruculosis, sine perisporio 11–13.5 × 7.5–8 μ, fusoideis vel oblongo subfusoideis, in parte suprahilari levibus, poro germinativo apicali rotundo exiguo munitis, spadiceis; perisporio turgescente, interdum usque ad tetradam integram involucrante, collabente sed persistente, saepe reticulatim plicato.—Hymenio: Basidiis 19.5–20 × 7.5–9 μ, hyalinis, tetrasporis. Cheilocystidiis versiformibus, plerumque subglobosis, nonnullis elongatis, interdum admodum voluminosis.—Hyphis fibulatis.—Tegumento velari pilei ex elementis diverticulatis hyphosis (elongatis) et subisodiametricis efformato, his 42–45 × 35–42 μ, diverticulis latiusculis obtuse rotundatis, usque ad 1.5 μ altis, membrana straminea vel pallide straminea, in elementis elongatis diverticulatis diverticulis usque ad 3 μ projicientibus.—Ad lignum emortuum in silva, vernalis vel hiemalis. Typus: CHILE: Osorno: Lago Puyehue, 14–IX–1967, Singer M 7507 (SGO).–Haec species ita ut *C. hypsizygus* ad stirpem Coprini narcotici pertenere apparet, sed ambae species habitatione lignicola Coprino martinii Favre tantum comparandae a quo sporis minoribus et habitatione lignicola (haud caricicola) nec non basi stipitis haud nigrescente differunt.

Coprinus sclerobasidium Sing. spec. nov.—Pileo pallide brunneolo-griseo, cremeo-griseo, griseo-brunneo-furfuraceo, praesertim in centro, particulis furfuraceis flocculosis et uno ab alio separatis et numerosis, exiguis sed manifestis, superficie longe pectinato-subrimosa, conico sed obtusato, dein applanato et interdum subumbonato, 22–31 mm lato, primum usque ad 22 mm alto.—Lamellis pallidis, dein nigris, angustis, confertissimis, angustissime adnexis, tarde deliquescentibus.—Stipite albo, macroscopice glabro, nudo, cavo aequali vel apicem versus attenuato,

40–60 × 2–5 mm; velo et volva nullis, ozonio nullo.—Contexto albo, in pileo admodum tenui, inodoro.—Sporis (4.5)–8–10 × (4.5)–5–6.5 × 4.5–5.5 μ, dimorphicis (1): 4.5 × 4.5 μ et globosis, paucis, (2): maioribus, ellipsoideis vel ovoideis, ad latus interius applanatis vel depressis, omnibus poro germinativo latissimo, hyalino, apicali, truncato instructis, levibus, intense spadiceis, crasse tunicatis.—Hymenio: Basidiis 18–21 × 6.5–9 μ, aut hyalinis aut in parte superiore fulvo-ochraceis, interdum spadiceis, et ceterum hyalinis, clavatis, pigmentatis semper crasse tunicatis, hyalinis tenui-tunicatis. Cheilocystidiis vesiculosis vel ampullaceis (tunc apice ± 4 μ crasso et breviusculo vel sublongo), hyalinis, 21–36 × 16–35 μ.—Hyphis in tramate hymenophorali regulari hyalinis, defibulatis.—Floccis pilei ex hyphis filamentosis consistente sed eis sphaerocystidioide terminantibus vel in catenas sphaerocystarum transeuntibus; sphaerocystis et elementis dilatatis e.gr. 41–80 × 28–40 μ, cum elementis hyphalibus fulvo-ochraceis vel ochraceis, excrescentiis subtilibis cornutis (1–2, haud pluribus) vel integris et haud appendiculatis, ceterum levibus, membrana tenui vel plerumque crassa (1–2 μ diam.) instructis, pigmento concolori vel obscuriore lamellatim incrustatis, sed nonnullis incrustatione destitutis, hyphis fundamentalibus multi-septatis (sine fibulis), sphaerocystis interdum separabilibus.—Tegumento stipitis inconspicuo, e pilis ampullaceis vel ventricosis, apice late rotundatis vel acutis, 30–40 × 8–15 μ efformato.—Ad terram nudam in vegetatione herbacea extra silvam, gregatim, haud fasciculatim, vernalis. Typus: ARGENTINA: Neuquén: Lago Lacar, Pucará, 6–XI–1966, Singer M 6014 (BAFC).

COPRINUS LAGOPUS (Fr.) Fr. var. *MACROSPORUS* Romagnesi in Kühner & Romagnesi, Fl. anal. Champ. Sup. p. 389. 1953.

See Kühner & Romagnesi, l.c. Our material: CHILE: Santiago, Laguna de Aculeo, on dead foliage in semi-arid vegetation in spring, 17–X–1967, Singer M 7803 (SGO).

Coprinus phylladophilus Sing. spec. nov.—Pileo albo vel albido marginem versus, sed fulvo vel ochraceo-fulvo in parte centrali, demum grisascente in margine quia pileus longe pectinato-subrimosus est et hymenium exponit, sub lente particulis minutis brunneolis laxe tomentosulis sparsis tecto, campanulato et altiore quam diametri dimensio, 10–15 mm lato, 13–16 mm alto, demum minus alto sed vix repando.—Lamellis nigris, ascendentibus, angustis, confertis, sinuatis et dente adnexis, tarde deliquescentibus.—Stipite albo, pubescente, ut minime sub lente, leniter attenuato apicem versus, evelato, 30–32 × 2–2.5 mm.—Contexto albo, inodoro.—Sporis 8.5–10.5 × 6.3–6.7 × 5–5.7 μ, ovoideo-lentiformibus, levibus, crasse tunicatis, fuligineo-nigroantibus, poro germi-

nativo lato, convexo-truncato centrali praeditis.—Hymenio: Basidiis didymis, 18–30.3 × 10–10.3 μ, cylindraceis vel late clavatis et tetrasporis atque 36–38.5 × 7.5–8 μ, elongato-clavatis, (2)–4-sporis, hyalinis, tenui-tunicatis. Cystidiis nullis; cheilocystidiis 29–31 × 11 μ, late ampullaceis apice lato (4.5 μ) obtuso praeditis, hyalinis. Pseudoparaphysibus 25 × 15 μ vesiculoso-clavatis, hyalinis.—Hyphis defibulatis. Subhymenio cellulari, hyalino. Tramate hymenophorali regulari, ex elementis voluminosis efformato.—Epicute pilei polystrato, ochraceo vel ochraceo-hyalino, pigmento neque membranali neque incrustante, elementis e.gr. 18 × 16 vel 23 × 22 μ. Tegumento velari ex elementis intertextis spatiis aereis interruptis, elongatis, membrana crassa (1.2–1.5 μ) instructis, brunneo-melleis, haud vel vix incrustatis, multiseptatis, 5.5–11.3 μ latis, simplicibus, raro furcatis, apice rotundatis efformato.—Tegumento stipitis e pilis erectis efformato; pilis plerumque subclavatis vel cylindraceis, hyalinis, tenui-tunicatis, ad basin interdum dilatatis, numerosis sed haud hymeniformiter congregatis, e.gr. 22 × 6.8 μ, nonnullis cheilocystidiis similibus. —Ad folia dejecta arboris frondosae. Typus: ARGENTINA: Buenos Aires: Sierra de Tandil: Finca Pascuala, 16–XI–1962, Singer S 365 (BAFC).

COPRINUS SACCHARINUS Romagnesi, in Kühner & Romagnesi, Fl. anal. Champ. Sup., p. 382. 1953 ad int.

This species is conceived more as a stirps with a provisional name than a species. For this reason we wish to give the description of our Chilean material:

Pileus ochraceous-fuscous with whitish veil floccons, long pectinate, campanulate, as high as broad, eventually repand, 15 mm in diameter.—Lamellae black when mature, ascendant, rather narrow, close.—Stipe white, glabrous (not pubescent even under a lens), slightly tapering up from an often broadened base, 50–55 × 3 mm; veil (universal) forming a volva-like basal disc of floccons or a crown-like ring but these remnants are rather fugacious.—Context inodorous.

Spores 7–9 × 5–5.3 × 4.5–5.3 μ, barrel-shaped ellipsoid, but slightly reniform seen laterally, cinereous, smooth, with apical broad hyaline truncate germ pore (this not oblique).—Basidia 20.5–22 × 6.5–7.5 μ, 2–4-spored.—Hyphae of trama hyaline, without clamp connections.—Floccons of pileus of compacted hyaline to fulvous sphaerocysts with quite thin to moderately thin (0.6 μ) wall which is or is not punctate by semiglobose minute (0.5 μ) ornamentations, subglobose, rarely clavate (and then mostly terminal), 28–52 × 22–46 μ.

On woody humus underneath a dead trunk of *Aextoxicum punctatum*, 14–IX–1967, Singer M 7505. CHILE: Osorno: Lago Puyehue (SGO).

Possibily also a similar fungus, also spring-fruiting, but much smaller, from a similar locality 4–XI–1966: ARGENTINA: Neuquén: San Martín de los Andes (BAFC).

COPRINUS MICACEUS (Bull. ex Fr.) Fr., Epicr. p. 247. 1838.

In the sense of Ricken, Kühner & Romagnesi etc., this fungus is very common, particularly in parks, for example in fall in the city of Santiago, but also in the southern region, growing all around the alley trees. Descriptions of this species see Ricken, Blätterp. 1: 63, 1910, 2, pl. 22, fig. 4, 1915, cp. Kühner & Romagnesi, l.c. p. 382.

Coprinus subrenispermus Sing. spec. nov.—Pileo fulvo-ochraceo vel fulvido, pallescente usque ad sordide pallidum sed in apice dehydratatione gilvo, macroscopice glabro et nudo, sed sub lente e dermatocystidiis setosis subtiliter pruinoso, dein glabrescente, hygrophano, ovoideo, dein campanulato, haud vel vix rapando 9–20 mm lato, 9–10 mm alto.—Lamellis subcastaneis dein griseis vel fuligineis, ascendentibus, adnexis vel adnatis, satis angustis, confertis sed haud confertissimis, tarde vel non deliquescentibus.—Stipite albo, subtiliter pruinoso, demum glabrescente, haud radicante, 33–55 × 1–1.5 mm; velo nullo.—Contexto albo, inodoro. —Sporis 8.5–11.5 × 5.8–7 × 4.5–5.5 μ, breviter ellipsoideis vel ovoideis visis frontaliter, leniter lentiformibus, visis lateraliter ad latus interius leniter sed manifeste concavis, levibus, in KOH fuligineis, castaneis in ammoniaco, poro germinativo apicali, raro subapicali sed vix manifeste obliquo, lato, hyalino, truncato praeditis.—Hymenio: Basidiis haud monodymis, e.gr. 17–27 × 5–6 μ, tetrasporis. Cheilocystidiis dermatocystidiis similibus sed interdum fugacibus. Pseudoparaphysibus numerosis. Cystidiis haud visis.—Hyphis in tramate hymenophorali regulari sat latis, fibulis haud visis.—Dermatocystidiis pilei et stipitis 36–160 × 11–37 μ, e basi ventricosa vel sphaerocystoidea ampullaceis, apice longo vel rarius brevi, cylindraceo, ± 5 μ lato, obtuso, hyalinis vel leniter fuscidulo-hyalinis, tenui-tunicatis, in pileo inter sphaerocystas epicuticulares intermixtis et erectis, in stipite ex hyphis superficieis corticalis stipitis emergentibus.—Ad terram et ad lignum putridum, vernalis et autumnalis. Typus (M 7789) in SGO conservatus est.

Material studied: ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 27–IV–1965, Singer M 5303 (BAFC).—CHILE: Santiago: Laguna de Aculeo, 24–IX–1967, Singer M 7789 (SGO).

COPRINUS SUBIMPATIENS M. Lange & Smith, Mycologia 45: 772. 1953.

Description see there, or Dansk Bot. Ark. 14 (6): 123. 1952.

Our material comes from ARGENTINA: Neuquén: Puerto Manzano, on earth in meadow, 19–III–1963, Singer M 3085 (BAFC).

Psathyrella

PSATHYRELLA INVOLUTA (Romagnesi) Moser, in Gams, Kl. Krypt.-fl. 2 b: 217. 1967.

Description see Romagnesi, Bull Soc. Linn. Lyon 21: 156. 1952.

Our material comes from CHILE: Santiago: La Rinconada, 21–VI–1966, W. Lazo RI-2 (SGO).

Psathyrella nothomyrciae Sing. spec. nov.—Pileo fuligineo ("falcon" M & P), hygrophano, dehydrato vinaceo-roseolo in parte marginali, olivaceo in disco, per 1/2 vel 2/3 radii pellucide striato et sulculato, ceterum levi, glabro, nudo, campanulato, dein repando centro late subumbonato et margine oblique declivi vel applanato vel recurvato, ± 24 mm lato.—Lamellis atris, acie roseolis, mediocriter latis, subconfertis, interdum ab apice stipitis separatis sed plerumque adnatis.—Stipite albo, glabro, aequali, 55 × 2 mm, basi fortiter albostrigoso et strigositate foliis adhaerente, sed haud radicato, basi subtus rotundata; velo nullo.—Contexto albo in siccis, inodoro in vegetis.—Sporis 13.5–15.5 × 6.5–8 μ, spadiceo-fuligineis, anguste ellipsoideis, apicaliter (haud excentrice) poro germinativo truncato praeditis, levibus.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 20–21.5 × 10.3–12 μ, tetrasporis. Cystidiis nullis; cheilocystidiis 13–30 × 9–25 μ, vesiculosis vel globosis, saepe pedicellatis, hyalinis vel saepius melleis vel ochraceis.—Hyphis fibulatis, sed nonnullis septis secundariis praesentibus, in tramate hymenophorali regulari voluminosis, pallide brunneolis.—Epicute pilei Psathyrellae typica.—Ad folia dejecta in silva sub his aliisque Myrtaceis. Typus: CHILE: Valparaiso: Quintero, 5–VI–1967, leg. C. Villagrán, comm. Singer M 6944 (SGO).

Psathyrella marthae Sing. spec. nov.—Pileo atrobrunneo vel atrocastaneo ("cattail" vel 8–J–12, M & P), hygrophano, dehydratatione ochrosordido vel ochraceo vel pallido, glabro, per 1/8 vel 1/2 radii sulcato, campanulato dein convexo, 8–25 mm lato, 7–10 mm alto.—Lamellis griseis ("English oak" M & P), subconfertis, latissimis, adnatis.—Stipite albo, e velo fibrilloso, subtus interdum zona albo velo cingulato, sed haud apicaliter annulifero, subaequali vel leniter gradatimque attenuato apicem versus, 31–40 × 1–2.5 mm (ad apicem), 1–3 mm ad basin.–Contexto inodoro.—Sporis 10.7–11.3 × 6.3–7.3 μ, ellipsoideis vel subellipsoideis,

fuligineo-nigris, poro germinativo lato truncato apicali praeditis, levibus. —Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 23.5–24 × 8.5–12 μ. Cheilocystidiis 23–35 × 10.3–11.7 μ, ventricosis vel clavatis, late rotundatis ad apicem, levibus, brunneolo-hyalinis.—Hyphis tramatis hymenophoralis regularis hyalinis.—Epicute pilei cellulari typico Psathyrellarum modo.—Ad terram in silva nothofaginea (*N. pumilio*) montana. Typus: ARGENTINA: Neuquén: Supra Puerto Manzano, "Cerro Cortinario", 11–IV–1963, leg. Martha & Rolf Singer, M 3380 (BAFC).

PSATHYRELLA CANDOLLIANA (Fr.) Maire, in Maire & Werner, Mém. Soc. Sc. Nat. Maroc, 45: 112. 1937, as *P. candolleana*.

This species is extremely common in Europe, North America, Asia, and South America, here particularly in reforested areas under frondose trees and in gardens and parks. A description of this species can be found in the current European and North American literature.

PSATHYRELLA ATRIFOLIA (Peck) A. H. Smith, Contrib. Univ. Mich. Herb. 5: 38. 1941.

Description see there. Our Chilean material has the following characteristics:

Pileus deep fuscous brown ("cattail" br. between "cattail" and "new cocoa" M & P), hygrophanous, fading to pale cream gray ("Manila"), overlaid by a silky white veil which covers originally the entire pileus, later only the marginal zone, in quite mature (black-gilled) caps naked, not viscid, transparently striate when wet over the margin and when faded becoming distinctly rugose-wrinkled, almost ovoid or ellipsoid-obtuse, later campanulate or convex with or without a low papilla, 16–20 mm broad; veil aside from covering the surface, also appendiculate at first (but slightly so).—Lamellae gray, purplish fuscous when mature, eventually almost black, broad, close, adnate.—Stipe fuscous ("Olive wood") but strongly overlaid with silky white fibrils of the veil to a subannular zone (here fibrils particularly dense), below eventually glabrescent, and the "olive wood" (M & P) ground color gradually appearing, especially in the lower part, with pruinate apex, narrowly hollow, subequal or slightly tapering upward, 50–52 × 2–4.5 mm; veil white, subannular at first, white rhizomorphs very thin and abundantly adhering to base.—Context concolorous with the surface, fleshy-fragile, inodorous.

Spores 7–8.5 × 4.5–5.2 × 4–4.8 μ, ellipsoid but with less convex, almost applanate inner side, rather deeply reddish fuscous, smooth, with hyaline apical truncate germ pore.—Hymenium of basidia, cystidia, margined by

cheilocystidia. Basidia 20–24 × 6.5–8.5 μ, rarely as short as 15 μ, 4-spored. Cheilocystidia 20–32 × 7.5–11 μ, ampullaceous, more rarely vesiculose to ventricose, the neck (if ampullaceous) either thickened at apex or at least constricted below it, and then about 4.5 μ broad at tip, 3 μ at constriction, or else apex almost cylindrical, up to 10 μ high, broadly rounded at tip in all cases. Pleurocystidia similar, but often larger, up to 43 × 12 μ, apex 10–18 × 4–5.5 μ, tip not greening in ammonia mounts, often slightly broadened and in this case reaching 4.5–5.5 μ, not very numerous.—Hyphae of context and hymenophoral trama (which is regular) brown pigmented.—Epicutis of pileus consisting of a subhymeniform layer of sphaerocysts over irregularly swollen subisodiametrical elements.—On earth, gregarious to cespitose under *Nothofagus obliqua* (var.).

Material studied: CHILE: Santiago: Cerro Robles at 2000 m alt., 13–IX–1967, Singer M 7793 (SGO).

Psathyrella valdiviana Sing. spec. nov.—Pileo dilute brunneolo, hygrophano, in parte marginali dehydratione stramineo-pallido, centro vix mutabili, leniter radialiter rugoso, glabro sed in zona marginali veli gratia albo-sericeo, campanulato-semiglobato, dein convexo-subumbonato, vel umbonato, 30–42 mm, rarius latiore; velo appendiculato albido.—Lamellis pallidis demum cocao-fuligineis, submarmorato-maculatis in siccis, latis, confertis, adnatis sed ab apice stipitis separantibus.—Stipite albido vel pallide aquose lignicolori, glabro vel subglabro in parte inferiore, sed subtus albo-tomentoso usque ad zonam manifestam annularem, minus fibrilloso vel vix fibrilloso supra zonam annularem, leniter longitudinaliter striato in parte inferiore, cavo, primum basin versus attenuato, demum apicem versus plus minusve attenuato, interdum basi turgido, 60–64 × 6–12 mm, rarius majore; velo fibrilloso-tomentoso atque sat laxo sed abundante, demum subnullo, rarius subannulatim persistente.—Contexto aquose brunneolo, neque albo neque flavo in vegetis; odore debili; sapore submiti (leniter acri), nec non leniter farinaceo.—Sporis 8–9 × 5.8–6.3 μ, ellipsoideo-subfusiformibus, ornamentatione exosporiali e verrucis latiusculis humilibus (0.2–0.3 μ altis), obtusis vel subobtusis consistente ornatis, membrana crassa complexa, et poro germinativo leniter protracto sed late truncato institutis, perisporio hyalino bene evoluto munitis ita ut interdum saccate involucrentur in medio KOH.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis 20–26 × 6.5–8 μ, tetrasporis. Cystidiis haud constanter praesentibus vel admodum sparsis et interdum fasciculatis, hyalinis, ceterum cheilocystidiis similibus. Cheilocystidiis densis et numerosis, in medio vel basin versus ventricosis, sub apice interdum constrictis vel apice tenuiore (5–6.5 μ) munitis, supra

constrictionem interdum subcapitulatis (6.5–9 μ diam.) vel claviculatis, hyalinis vel pallide stramineo-melleis, 45–75 × 7–9.5 μ, tenui-tunicatis, obtusis. Acie lamellarum heteromorpha.—Hyphis ubi pigmentatis ex ea re incrustatis, brunneolis, fibuligeris.—Epicute Psathyrellarum, Lacrymariarum modo typice evoluta.—Ad terram gregatim in silvis alteratis vel prope arbores, praesertim ad vias. Typus: CHILE: Valdivia: Cordillera Pelada, in latere occidentali, 450 m alt., 7–V–1965, Singer M 5570 (BAFC).—Paratypus: 4–V–1967, Hueycolla, 50 m alt., Singer M 6699 (SGO).—Item in provincia Llanquihue observata.

Psathyrella acutissima Sing. spec. nov.—Pileo castaneo-fuligineo ("Negro", apice "Vandyke br." M & P), hygrophano, dehydratione dilute cremeo-griseo ("Manila"), ex integro veli gratia ochraceo vel brunneo fibrilloso-squarroso et floccoso appendiculato (e.gr. "Antique bronze" M & P), per tertiam partem radii sulculato in maturis, margine recto, anguste conico vel conico campanulato et papilla vel apice acutissime attuenato vel protracto, saepe rostrato, 6–13 mm lato, 12–17 mm alto.—Lamellis griseis ("limestone" M & P), in siccis sub lente atromaculatis, ascendentibus, subangustis vel latis, 1–3 mm latis, ad apicem arcuato-adnatis, confertis, acie albis vel albidulis.—Stipite albo et striatulo, par pallidum cremeo-griseum grisascente (e.gr. "Manila"), in parte inferiore demum roguloso et coriicolore, exannulato sed velo tecto ita ut pileus, particulis veli minus densis et altis, demum sparsis et appressis, subochraceis, intus solido vel mox anguste cavo, haud radicante, ad apicem incrassato, in parte superiore subaequali vel aequali, 35–45 × 2–3.5 mm; mycelio basali albo.—Contexto in siccis pallido sed in cortice stipitis superficiei concolori, vel brunneo; odore nullo.—Sporis 9–10.8 × 5–5.8 μ, oblongis vel cylindraceo-oblongis, levibus, nigrescente-fuligineis, poro apicali manifesto truncato hyalino praeditis.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato.—Basidiis 20–21.5 × 9.5–10 μ, late clavatis, tetrasporis. Cheilocystidiis 20–22.5 × 2.7–5.5 μ, ad basin ventricosis et apicem versus attenuatis vel ampullaceis, rarius ex integro filamentosis, apice 0.5–1 μ diam., interdum subcapitato (e.gr. 3.5 μ diam.), hyalinis. Acie lamellarum heteromorpha. Cystidiis ad latera lamellarum sat numerosis, 26–32 × 7.5–11 μ, ampullaceis, apice 2.5–3.2 μ latis et saepe claviculato-subcapitatis (e.gr. 4.5 μ diam.), hyalinis, apice integris vel raro excrescentia vel excrescentiis sterigmatoideis apicalibus erectis exiguis vel minutissimis ornatis.—Hyphis fibuligeris.—Epicute ex elementis subisodiametricis frequenter angulariter compressis vel irregulariter extenuatis, pigmento brunneolo vel intense spadiceo incrustatis efformata et veli elementis elongatis, item incrustatis superpositis.—Ad folia quisquiliasque in silvis mixtis (Nothofagus cum coniferis), gregatim. Typus: ARGEN-

TINA: Rio Negro: Laguna Frías, Puerto Alegre, 13–III–1959, Singer M 1756 (BAFC).—Paratypus: CHILE: Valdivia: Chivería, 7–V–1967, Singer M 6775 (SGO).

PSATHYRELLA AMMOPHILA (Dur. & Lév.) Orton, Trans. Brit. Myc. Soc. 43: 180. 1960.
Description see Singer, Mycopath. & Mycol. Appl. 34: 132. 1968.

Psathyrella moseri Sing. spec. nov.—Pileo brunneo ("Cochin" vel "Kis kilim" M & P), dein fusco vel fuscidulo ("teakwood" vel "Mosul" M & P), hygrophano, usque ad sordide brunneolum vel pallide grisello-cremeum ("Aztec" vel "champagne" M & P) pallescente, per medium radium pellucide striato, ellipsoideo vel semiglobato, mox campanulato, dein convexo, obtuso vel subumbonato, 23–70 mm lato; velo primum maculas appressas sericeas conspicuas in superficie marginali per medium radium et interdum appendiculationem formante, demum pileo nudo.—Lamellis griseis ("beaver" M & P), dein fuscis ("Santos"), sat latis, ad aciem albis, subconfertis, anguste adnexis.—Stipite albo, e velo squamuloso armillato universali multizonato, nec non cortina apicali interdum annuliformi praedito, ad apicem longitudinaliter striato, aequali vel leniter apicem versus attenuato, pseudorrhiza destituto, 57–112 × 4–13 mm.—Contexto albo, inodoro.—Sporis 9.7–11.7 × 6–6.3 μ, cylindraceo-oblongis vel ellipsoideis, atrofuligineis vel sepiaceo-fuligineis, actione solutionum iodi brunneis, levibus, poro germinativo apicali munitis.—Hymenio e basidiis et cystidiis metuloidiformibus efformato et cheilocystidiis marginato. Basidiis 20–28.5 × 9–11.7 μ, tetrasporis. Cheilocystidiis 34.5–49.5 × 10.8–14 μ, ampullaceis, integris, subacutis vel acutis, apice 9–14 × 2–5 μ, membrana tenui vel subtenui (0.5–0.8 μ diam.) hyalina levi instructis, haud incrustatis, inamyloideis, intus hyalinis vel dilute porphyriis. Cystidiis metuloideis ad aciem et latera lamellarum numerosis vel densissimis, 65–126 × 13–22 μ, apice 30–63 × 6–10 μ, 2–4 appendicibus cornutis subacutis 2–4.5 × 2–3.5 μ munitis apicalibus, membrana crassa, praesertim ubi basis apicis est (1–2 μ diam.), haud incrustata vel ad apicem cellulae leniter resinacee incrustata instructis, contento homogeneo e pigmento dissoluto intracellulari pallide porphyrio-brunneo, raro hyalino praeditis, stramineis sub magnificationibus exiguis, pedicellatis vel haud pedicellatis.—Hyphis tramatis hymenophoralis regularis hyalinis, fibulatis, inamyloideis. Epicute pilei cellulari.—Ad terram et humum in silvis nothofagineis (*N. pumilio*) gregatim, autumnalis. Typus: ARGENTINA: Neuquén: Supra Puerto Manzano, "Cerro Cortinario", 1100 m alt., 11–IV–1963, Singer M 3379 (BAFC).—Species sequenti

peraffinis, sed veli abundantia clare distincta ad honorem professoris M. Moseri nominata est.

Psathyrella dactylocystis Sing. spec. nov.—Pileo fusco, dactylicolori vel brunneo (e.gr. "stag", "olive wood", "cinnamon br." vel "antique bronze"), rarius gilvo, marginem versus in striis radialibus aut centro concolori aut magis griseo, dehydratione superficieis hygrophanae pallescente usque ad gilvum vel dilute sordide ochraceum vel pallidum, interdum iam in vegetis inter strias pallido, glabro, per quartam partem vel duas tertias radii pellucide striato in maturis, nonnumquam etiam sulculato, raro leniter radiatim canaliculato-sulcato, sed typice haud rugoso, campanulato vel interdum conico-campanulato, dein campanulato-convexo vel convexo, demum applanato, subumbonato vel umbonato aut ex toto obtuso, 11–31 mm lato.—Lamellis avellaneo-griseis vel griseis, dein atro-griseis vel griseo-subfuligineis, acie plerumque albis, sat latis vel latis, frequenter ventricosis, confertis vel subconfertis, plerumque confertis, adnexis vel adnatis, raro sinuato-adnexis. Sporis in massa nigris.—Stipite albo, demum pallido, appresse subsericeo-fibrilloso in parte inferiore vel glabro vel glabrescente, ad apicem pruinato, ceterum frequenter nitidiusculo, aequali vel basin versus vel ad basin leniter incrassato, 20–75 × 1.5–5 mm; mycelio basali albo-fibrilloso; velo albo, sericeo, tenuissimo ad marginem pilei et in parte inferiore stipitis sed fugacissimo, numquam manifeste appendiculato vel armillato in maturis, vix manifesto in juvenilibus.—Contexto subtenui et carnoso in pileo, perfragili et albo in stipite, inodoro.—Sporis (8.5)–9–11.3 × 4–5.8 μ, ellipsoideis vel anguste ellipsoideis, porphyrio-sepiaceis, levibus, poro germinativo apicali, late truncato hyalino praeditis, interdum contentu subtiliter granulosulo repletis.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis 18–19.5 × 8–9 μ, tetrasporis. Cheilocystidiis dimorphis, (1) vesiculosis, (2) ampullaceis, omnibus tenui-tunicatis et integris, hyalinis vel subhyalinis, raro intus fuscidulis, typi (1): 19–40 × 12.5–19 μ; typi (2): 20–40 × 5.8–12 μ. Cystidiis metuloideis, numerosis, 40–89 × 12–21–(23.5) μ, ampullaceis, apice (4.5)–8–9.5 μ lato sursum appendicibus dactylomorphis (0–1)–2–4–(5), erectis, obtusis, 3–10 × 2.5–4 μ (in cystidiis juvenilibus saepe subnodulosis, in vetustis saepe bifurcatis) ornatis, membrana crassiuscula (0.3–1.3 μ diam., in juvenilibus saepe tenuiuscula) instructis, intus pigmenti dissoluti causa, fuscidulo-hyalinis vel fuscidulis, superne mucilagineo-incrustatis exudati causa quod ammoniaci ope virescit aut viridi-caerulescit; hoc pigmentum in solutione ammoniacali diffunditur ita ut interdum etiam guttulae sporarum leniter virescant.—Hyphis fibulatis, in tramate pilei brunneis.—Epicute pilei hyalina, ex elementis vesiculosis hymeniformiter dispositis efformata,

cellulis e.gr. 40 × 28 μ.—Ad humum nec non ad cortices, folia delapsa, culmos Chusqueae, lignum et quisquilias silvestres, solitario vel gregatim, vernalis et autumnalis (f. *typica*). Typus (M 4012) conservatus est in BAFC.

Material studied: ARGENTINA: Rio Negro: Cerro Otto, 17–XI–1964, Singer M 4012 spring form under *Nothofagus pumilio,* gregarious, pileus subumbonate or umbonate (BAFC), typus.—Laguna Frías, 10–XI–1966, spring form under *Nothofagus dombeyi, Chusquea,* and *Fitzroya,* Singer M 6052 (BAFC), paratypus.— Neuquén: Puerto Manzano, under *Nothofagus dombeyi* and *Austrocedrus chilensis,* 22–IV–1964 (fall !), Singer M 3429, M 3436 (the latter very slightly silky-flocculose on pileus and lower stipe when quite young) (BAFC).—La Angostura, Selva Triste, spring form, quite obtuse, 8–XI–1966, Singer M 6036 (BAFC).—Lago Lácar, Pucará, spring form, 6–XI–1966 (BAFC).—CHILE : Valdivia : 5 km N. of Conales, 14–V–1967 (fall !), Singer M 6902 (SGO).—Maule: Between Chovellén and Trehualemu, winter, 3–VIII–1967, Singer M 7202, M 7217 (SGO).—Llanquihue: El Frutillar, spring: 15–IX–1967, Singer M 7544 (SGO).

Forma **dactylocystis:** See above.

Forma **rugulosiceps** Sing. f. nov.—Pileo rugoso (fusco, dehydratione pallescente), Sporis 8.5–9.5 × 4–5.5 μ, cornubus cystidiorum saepe denticulato-fimbriatis, denticulis subacutis vel acutis.–Ceterum ut in typo f. dactylocystidis. Typus formae: ARGENTINA: Neuquén: Puerto Manzano, 5–IV–1963, Singer M 3282 A (BAFC).

Haec forma autumno lecta ad terram sub Austrocedro et Nothofago dombeyi. Pileus omnino obtusus est, sed subumbonatus variat.

Forma **latispora** Sing. f. nov.—Sporis 9.5–12.3 × (5.5)–5.8–6.5 μ distinguitur. Pileus hic obtusus vel obtusatus est. Cystidia frequenter membranas crassiores (1–4 μ) et nonnullos appendices sterigmatoideos et acutos, alios obtusos habent. Typus: ARGENTINA: Neuquén: Cerro Colorado, 9/10–III–1959, Singer M 1731 (BAFC).—Paratypus: Rio Negro: Cerro Catedral, 29–IV–1965, Singer M 5350 (BAFC).

Haec forma aestate et autumno lecta ad terram et prope (non ad) truncos Nothofagi pumilionis. Sporae in massa fuligineo-sepiaceae sunt (ignoramus an usque ad nigrum variant vel ab eis typi differunt).

In tribus formis cognotis discoloratio mucilaginis cystidiorum eam in *Psathyrella multipedata* et *P. lutensi* descriptam in mentem revocat, sed ab his speciebus quin distinctae sint haud dubitamus.

Psathyrella polycystidiosa Sing. spec. nov.—Pileo spadiceo vel dactylo-brunneo vel subcastaneo, hygrophano, siccando primum bicolori, demum ochraceo-pallido vel pallide ochraceo per totam superficiem, haud viscoso, fortiter vel manifeste rugoso-venoso-reticulato, in exsiccatis ochraceo-fuscidulo, glabro, nudo, convexo, dein plerumque circum umbonem applanato, rarius exumbonato, 24–47 mm lato.—Lamellis spadiceo-atro-castaneis ("Vandyke br.", "auburn" Maerz & Paul) vel fusco-argillaceis, acie sordide alutaceis vel haud manifeste sordide pallidis, subangustis vel latis, confertis vel subconfertis, anguste adnexis vel adnatis (in exumbonatis).—Stipite albo vel sordide albido, e fibrillis veli (quod etiam ad marginem pilei interdum appendiculatione flocculosa apparet) flocculoso vel fibrilloso, sed in adultis saepe denudato, aequali vel parte basali crassiore, 32–72 × 3–7 mm; velo pallide brunnescente vel sordide alutaceo (e.gr. 11–C–4, M & P).—Carne (disco pilei excepto) tenui, fragili, inodora.—Sporis 7.7–9.5 × 4.3–5.2 μ, lividis, membrana fusca, levi instructis, poro germinativo latissimo truncato, ellipticis, lateraliter visis latus interius minus convexum vel applanatum monstrantibus, haud opacis.—Hymenio e basidiis, pleurocystidiis et cheilocystidiis consistente; basidiis 17–22 × 8–8.5 μ, tetrasporis; pleurocystidiis 38–73 × 7–18 μ, numerosis vel numerosissimis, conspicuis, membrana firma sed haud manifeste crassa (0.2–0.5 μ) hyalina instructis, fusoideis vel rarius ampullaceis, apice acutis vel raro obtusis, et hic plerumque membrana tenuissima instructis et massa mucilaginea muricatis, pigmento subhyalino-melleo vel pallide vel manifeste brunnescente membranali instructo, intus hyalinis, in ammoniaco haud virescentibus; cheilocystidiis 19–26 × 10–15 μ, subcylindraceis, saccatis, vel ventricosis vel subglobosis-pedicellatis, obtusis.—Hyphis tramatis hymenophoralis subirregularis pigmento membranali brunnescente instructis; fibulatis.—Epicute pilei cellulis subisodiametricis (e.gr. 45 × 32 μ) composita, hymeniformi vel subhymeniformi; hypodermio hyphis angustis cutem efformante consistente; sub hypodermio elementis tramatis diametro maiore gaudentibus; eis et elementis hypodermialibus plus minusve pigmentatis, epicuticularibus hyalinis.—Ad terram et lignum emortuum in silvis.

Var. **polycystidiosa.** Typus (BAFC) ad lignum putridum in silva prope Chivería, Cordillera Pelada, provinciae Valdivia, 22–IV–1964 lectus est, R. Singer N° M 3409.—Var. **exumbonata** Sing. var. nov. A varietate typica pileo carnosiore, obtusissimo stipite apice pruinoso sed velo subnullo perfugaci et habitatione ad terram in silvis differt. Typus (BAFC) ad Arroyo Frutillar, Neuquén, Argentina sub *Nothofagis pumilionibus* 21–IV–1965 a R. Singer lectus fuit, no. M 5104.—Var. **minor** Sing. var. nov. A varietate typica pileo minore (11–28 mm lato) stipite

minore (25–34 × 1.5–2.5 mm) et sporis paullum minoribus (7–9.5 × 4–5,5 μ, raro usque ad 11 × 6 μ) differt. Ad humum lignosum et ad frustula truncosque ligneos, praesertim sub Myrtaceis; fructificatione vernali vel hiemali excellit. Typus a R. Singer (BAFC) in Quetrihué, Neuquén, Argentina, 11–XI–1966 lectus no. M 6070.—Paratypi varietatis typicae: M 5736 (Singer, ibidem ut typus, 10–V–1965, BAFC); varietatis minoris: PU-74 (W. Lazo, Pumanque, prov. Colchagua, Chile).

PSATHYRELLA PENNATA (Fr.) Konr. & Maubl., Encycl. Myc. 14: 125. 1948.

Description and illustration of this species which we accept in the sense of Lange, Fl. Agar. Dan. pl. 151 E, see in this latter work, and see also key by Kühner & Romagnesi, Fl. anal. Champ. Sup. p. 360, 1953 under *Drosophila pennata* (Fr.).

Our specimens come from ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, on burned earth among *Funaria*, 22–IV–1965, Singer M 5325 (BAFC).

PSATHYRELLA PRONA (Fr.) Gillet., Hymenom. p. 618. 1874.

Our material corresponds to the interpretation of Kühner & Romagnesi.

Pileus brown fuscous when wet, hygrophanous, white with pinkish margin when faded, transparently striate and short sulculate over a short distance from margin, campanulate-convex, about 12 mm broad and 9 mm high.—Lamellae gray, red-edged when faded, subclose to subdistant, at first obliquely ascendant, later subhorizontal, pale ocher when dried, slightly ventricose, broad, at first rounded and broadly adnexed, later adnate.—Stipe white, equal, glabrous but with pruinate apex, about 55 × 2 mm.—Context inodorous.

Spores 19–24.5 × 11.5–14.5 μ, deep sepia, smooth, with broad germ pore, young fuscous grayish, fusoid, in profile subreniform.—Basidia 16–24 × 10–11.3 μ, (1)–2–3–(4)-spored, hyaline, some brownish inside. Cheilocystidia forming a broad fringe at the edge, 14–33 × 9–15 μ, broadly clavate, pale fulvous, smooth, wall 0.3–0.5 μ thick. Cystidia 22–32 × 11–11.5 μ, ampullaceous or ventricose-mucronate, apex 2.5–3.5 μ broad, not incrusted, hyaline, some fulvidulous-hyaline, thin-walled. —Hyphae with scattered clamp connections, fuscidulous-hyaline in pileus and hymenophoral trama (which is regular), but appearing hyaline under oil immersion in KOH.—Epicutis of typical *Psathyrella* structure without dermatocystidia or hairs. Hypodermium fulvous-tawny but without noticeable incrustations or contents.—Stipe surface also without hairs.

On one year old rests of charcoal scattered over the forest humus and earth, singly but gregarious. ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 23–XI–1964 (spring!), Singer M 4075 (BAFC).

Psathyrella apora Sing. spec. nov.—Pileo brunneo ("burned umber" M & P), pallidiore marginem versus, per quartam partem radii pellucide striato, centro rugoso vel rugoso-venuloso (bene visibili in pileis siccis), haud viscido, nudo, glabro, late conico-convexo, haud umbonato neque umbilicato, 7–15 mm lato.—Lamellis griseis ("beaver" M & P), dein dilute coffeaceis, mediocriter latis, confertis, adnexis vel adnatis.—Stipite sordide cinnamomeo-brunneolo in parte inferiore, subhyalino in parte superiore, nudo (sine vestigiis veli in exemplaribus juvenilibus), aequali, 20–30 × 1–2.5 mm.—Contexto inodoro.—Sporis 7–8.5 × 3.5–4.5–(5) μ, forma variabilibus, ellipsoideis vel ovoideis vel cuneiformibus, interdum strangulatis, lateraliter saepe reniformibus vel latere interiore applanato, poro germinativo omnino destitutis nec umquam ad apicem membrana discontinua visis, brunneis, bene pigmentatis, levibus.—Hymenio e basidiis et cystidiis efformato.—Basidiis 22–29 × 7.2–8.2 μ, tetrasporis. Cystidiis ad aciem atque latera lamellarum aequalibus, 42–57 × 8.5–12.2–(15) μ, magis numerosis ad aciem, ampullaceis, apice tenui neque acuto interdum minime granulari et membrana tenui instructis, hyalinis vel pallidissime brunneolo-hyalinis.—Hyphis (ita ut basis basidiorum) fibulatis in tramate hymenophorali et pilei dilute brunneolis.—Epicute pilei ex elementis brevibus 30–52 × 24–32 μ, plus minusve vesiculosis, subhyalinis, saepe longe pedicellatis, subhymeniformiter dispositis efformata. Hypodermio ex hyphis angustioribus horizontalibus hyalino-tunicatis sed pigmento dissoluto brunneolo impletis efformato.—Ad lignum putrecens in silva anectotrophica. Typus: CHILE: Valdivia: Hueycolla, 4–V–1967, Singer M 6702 (SGO).

Psathyrella tilcariensis Sing. spec. nov.—Pileo brunneolo-albido, fuscidulo-sordido vel fuscidulo in humidis, marginem versus saepe grisello, fortiter hygrophano, albido vel pallide coriicolore dehydratione, in margine tunc pallide brunneo-griseo et plus minusve ferrugineo-roseo vel rubro-roseo tincto, macroscopice glabro sed sub lente saepe frustulis minutissimis pallidis vel (in siccis) subferrugineo-roseis supra superficiem micaceam visibilibus, haud viscido, levi, in humidis leniter vel vix manifeste pellucide striatulo, in maioribus longe pellucide striato, demum denudato, campanulato vel convexo, centro saepe applanato, sed neque umbonato neque umbilicato, 6.5–12 mm lato.—Lamellis nigris, acie alba vel rosea, si alba, marginem pilei versus rosea, latis, subdistantibus, in siccis subdecurrentibus, in adultis horizontalibus. Sporis in massa nigris.—Stipite albo, basin versus interdum sordidescente, diametro pilei longiore, glabro vel apicem versus minutissime pruinato, glabrescente, levi, ebulboso, aequali vel apicem versus leniter incrassato, evelato, 20–37 × 0.6–1.5 mm.—Contexto albo vel albido, inodoro.—Sporis 13.8–16 × 7.8–

8.7 μ, ellipsoideo-oblongis, poro apicali germinativo truncato praeditis, levibus, sepiaceo-nigris vel fuligineis, iodi ope castanellis.—Hymenio e basidiis et cystidiis efformato. Basidiis 24.5–26.8 × 12–13.3 μ, tetrasporis, late clavatis, interdum abrupte claviculatis et pedicellatis. Cystidiis ad aciem numerosis vel numerosissimis, ad latera moderatim numerosis, 25–37 × 8.7–15 μ, ampullaceis vel fusoideo-ampullaceis vel subulato-ampullaceis, apice attenuatis vel cylindraceis, 3.7 μ cc. latis et obtusis vel obtusatis, rarius ventricoso-mucronatis, hyalinis rarius pallide stramineis. —Hyphis fibulatis.—Epicute pilei ex elementis subisodiametricis muricatis unistratosis efformata, hymeniformiter dispositis, hyalinis vel pallide stramineis. Eis superpositis hyphis velaribus interruptis visis. Hypodermio brunneolo-stramineo (sat pallide, pigmento haud vel vix incrustante), ex elementis prostratis cutem efformante.—Ad terram inter herbas aut muscos in semidesertis alpinis, solitario. Typus: ARGENTINA: Jujuy: Tilcara, Garganta del Diablo, 21–III–1955, Singer T 2312 (LIL).—Paratypus: CHILE: Santiago: Refugio Lagunillas, 27–III–1967, Singer M 6505 (SGO).

This species has not been found south of the Central Cordillera, but may well occur there. Both collections come from the zone between 1900 and 2100 m altitude.

Psathyrella subprona Sing. spec. nov.—Pileo spadiceo ("Piccaninny", in centro interdum "coffee" M & P), hygrophano, dehydratione dilute alutaceo-coriicolori a centro marginem versus pallescente, in exsiccatis cupreo-griseobiso vel griseo, per quartam partem vel quattuor quintas partes radii pellucide striato, post dehydrationem saepe longe sulculato, ex toto albo-sericeo-fibrilloso (in siccis interdum brunneolo-fibrilloso) veli causa, demum denudato, campanulato, obtuso, initio satis angusto, 7–28 mm lato, 7–13 mm alto.—Lamellis argillaceis vel atrobrunneo-bisis, ascendentibus, demum subhorizontalibus, angustis vel moderatim latis, confertis vel subconfertis, adnatis, acie albis sed marginem pilei versus vel ex toto siccando rosascentibus.—Stipite albo, interdum sericeo-fibrillosulo e velo in parte inferiore, sed mox denudato, aequali vel subaequali, ad basin rotundato vel raro breviter subattenuato, at haud radicante, 70–80 × 1.5–3 mm.—Contexto in humidis in pileo et stipite superficiebus concolori, inodoro.—Sporis 12.2–13.5 × 6.5–7.5 μ, ellipsoideis vel oblongis, atrospadiceis vel fuligineo-spadiceis, levibus, poro germinativo late truncato praeditis, in maturis subopacis.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis 25–28 × 9–11 μ, late clavatis, tetrasporis. Cheilocystidiis 20–41.5 × 7.5–14 μ, ampullaceis (nonnullis vesiculosis et e.gr. 19 × 11 μ), obtusis, apice 3–17 × 2–6 μ, hyalinis, interdum granulis irregularibus melleis incrustatis. Cystidiis 33–

60 × 11–14 μ, ampullaceis, apice pro ratione (cheilocystidiis comparatis) pro medio longiore, 2.5–7 μ diametri, rarius ad ipsum apicem subincrassatis, membrana et contento hyalinis instructis, rarius fuscidulo-hyalinis, tenui vel subtenui-tunicatis (membrana usque ad 0.5 μ crassa), sat numerosis.—Hyphis in tramate pilei hyalinis, fibulatis.—Epicute epithelium repraesentante, ex cellulis 15–40 μ diam. tenui vel subcrasse (usque ad 1 μ) tunicatis, incrustatione destitutis efformata, hypodermio ex elementis magis elongatis horizontalibus, fusco-incrustatis facto. Setis dermatocystidiisque nullis.—Ad terram in silva sub Weinmaniis, Flotoviis, Eucryphiis, et aliis arboribus frondosis (coniferis intermixtis) caespitose vel gregatim, autumnalis. Typus: CHILE: Valdivia: Hueycolla, prope Oceanum, 1–V–1967, Singer M 6578 (SGO).—Paratypus: ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, prope ripam lacus, 27–IV–1965, Singer M 5314 a (BAFC).

P. pseudogracili et *P. patagonicae* affinis.

Psathyrella patagonica Sing. spec. nov.—Pileo fusco vel atrogriseo-fusco ("biskra" M & P), marginem versus saepe magis griseo, hygrophano, siccando pallescente vel alutaceo-pallescente, exsiccato saepe cupreo-fusco, per medium radium vel tres quarta radii pellucide striato et sulcatulo, interdum levi et centro semper levi, glabro, sicco micaceo, conico vel campanulato, dein convexo, demum applanato-subconcavo, subumbonato vel umbonato in adultis, circulari vel demum extenso, 11–21 mm lato, 6–11 mm lato; velo primum levi, exiguo, sericeo, marginis superficiei appresso, mox evanescente.—Lamellis griseis, dein atrogriseis, in exsiccatis atris, subascendentibus, demum subhorizontalibus, sublatis vel latis, subconfertis vel subdistantibus, adnexis vel adnatis, acie albis.—Stipite albo, demum pallido, glabro sed ad apicem primum pruinato, aequali vel ad basin interdum leniter attenuato, haud radicante, recto, 44–84 × 1.5–4 mm.—Contexto in siccis albo, inodoro.—Sporis 11.5–16.5 × 6.5–8.2 μ, ellipsoideis vel oblongis, levibus, poro germinativo lato apicali truncato institutis, sepiaceo-fuligineis vel fuligineo-sepiaceis.—Hyphis tramatis hymenophoralis pallide fuscidulis vel hyalinis, fibulatis.—Hymenio e basidiis et cystidiis efformato, cheilocystidiis marginato. Basidiis 19.5–27–(30) × 9.5–16 μ, (2)–4-sporis, rarius 2–3–4-sporis. Cystidiis 30–68 × 10–18 μ, ampullaceis, apice longo vel mediocriter longo 5–9 μ lato instructis, obtusis vel obtusatis, raro leniter subcapitatis, sparsis vel sat numerosis, tenuiter tunicatis, hyalinis. Cheilocystidiis similibus, 26–56 × 7–13.5 μ, ampullaceis, apice quam in pleurocystidiis angustiore (5.5–6 μ) instructis, hyalinis, interdum submelleis. Interdum alii typi cheilocystidiorum visi: vesiculosi (saepe mellei, 15–16 × 13–14 μ) vel ventricosi (hyalini), 21 × 17–17.5 μ (an typice praesentes?).—Epicute

pilei cellulari, brunneola.—Ad folia putrescentia et humum silvestrem, autumnalis, solitario vel gregatim.—Typus: ARGENTINA: Neuquén: Puerto Manzano, 5–IV–1963, Singer M 3275 (BAFC).—Paratypus: Quetrihué, Arayanes, 21–IV–1965, Singer M 5113 (BAFC).

Aliae collectiones plus minusve differunt, sed vix satis ut separatim describi possint sub taxis autonomis.

M 5035 (Argentina: Neuquén: Villa Angostura, 18–IV–1965), differt apice cystidiorum latiore (8.5–9 μ diam.) ita ut interdum subutriformia sint. Sed ad latera viarum ad terram solitario crescit.

In hoc et in typo trama lamellarum hyalinum vel subhyalinum est. In M 3282 (Argentina: Neuquén: Puerto Manzano, 5–IV–1963) trama hymenophorale pallide fuscidulum est; etiam carpophora minora (11 mm lata – in typo 19 mm). In silvis nothofagineo-austrocedrinis crescit.

Psathyrella subandina Sing. spec. nov.—Pileo fusco ("English oak" M&P),hygrophano, dehydrationesordide pallideque brunneoloaut primum pallide cremeo-grisello vel pallide ochraceo-griseo, demum albescente, et tunc micaceo, in exsiccatis in centro plerumque fulvido-brunneolo, sed iam in humidis frequenter in centro magis fulvo, per medium radium pellucide striato et sulcato, interdum sulcatulo tantum, in siccis, glabro, nudo, interdum subtiliter ruguloso, campanulato vel convexo, dein convexo, demum convexo-repando et interdum centro depresso, vel applanato, 16–34 mm lato.—Lamellis spadiceis vel griseo-fuscis demum griseo-atris, ascendentibus, dein subhorizontalibus, confertis vel subconfertis, angustis vel latis, adnexis vel adnatis. Sporis in massa subnigris.—Stipite albo, glabro sed primum ad apicem plus minusve pruinoso, interdum etiam paullum appresse sericello, aequali vel apicem aut basin versus leniter attenuato, cavo, haud radicante, 25–65 × 2–5.5 mm; velo in stipite juvenili (et interdum usque ad maturitatem) manifesto, sericeo-fibrilloso vel subfloccoso, interdum in annulum fragmentarium fugacissimum inferiorem condensato, albo, dein evanescente.—Contexto albo, inodoro, fragili, praesertim in stipite.—Sporis 8.5–12 × 5–6.5–(7) μ, ellipsoideis, haud vel vix reniformibus, lateraliter ad basin interdum vix angularibus, membrana crassa complexa et levi instructis, atrosepiaceis vel subfuligineis, haud opacis, poro germinativo apicali truncato instructis.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis 20–30 × 8–12 μ, tetrasporis vel (1–2–3)–4-sporis. Cystidiis et cheilocystidiis simillimis, 27–55 × 8–19 μ, ampullaceis, interdum ad apicem extremum capitulatis (capitulo 6.2–8.8 μ diam.), apice 3–8.8 μ lato et e.gr. 25 μ longo, interdum minus quam diametrum partis ventricosae, interdum plus quam medium diametrum ventri mostrantibus, rarissime appendicibus (1–4) apicalibus visis. Cheilocystidiis pleurocystidiis identicis sed etiam

nonnullis vel multis cheilocystidiis (vel pseudoparaphysibus?) subvesiculosis melleo-hyalinis, 19–36 × 9.5–15 μ praesentibus, pedicellatis vel non pedicellatis. In una collectione cystidiis corpusculo interno hyalino instructis.—Hyphis hyalinis, in tramate hymenophorali regulariter dispositis, fibulatis. Subhymenio cellulari.—Epicute pilei ex elementis vesiculosis subisodiametricis melleo-hyalinis subhymeniformiter dispositis efformata. — Ad terram semiumbrosam in silvis et hortis, saepe in silvis sparsis vel inter herbas, gregatim. Typus (M 3278) in BAFC conservatus est.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 5–IV–1963, Singer M 3278 (BAFC), typus.—CHILE: Santiago: Macul, 4–IX–1967, Singer M 7340 (SGO).—Ranque, 6–VII–1967, Singer M 7141 (SGO).

This is perhaps near to *Psathyrella subalpina* Sing.

Psathyrella reticulata (Romagnesi) Moser ex Sing. comb. nov.

Drosophila reticulata Romagnesi, Bull. Soc. Linn. Lyon 21: 154. 1952.

Our South American material has the following characteristics:

Pileus bister brown (between "coffee" and "auburn" M & P), strongly hygrophanous, fading to avellaneous, and avellaneous when dried, macroscopically glabrous or subglabrous, wrinkled, with sulcate margin, campanulate, soon expanding to convex, but applanate or even slightly depressed around the low, obtuse and in age rather broad umbo, 13–28 mm broad.—Lamellae brown-gray, close, eventually subclose, rather broad or medium broad, adnate, with white edge.—Stipe white, at first sligthly pruinate at apex, not flocculose-fibrillose, subequal, 22–50 × 1.5–2.5 mm Context inodorous.

Spores 8.5–9.5 × 4.7–5.2 μ, frontally egg-shaped to elliptical, laterally sometimes very slightly subreniform, smooth, with truncate germ pore, subopaque, or opaque, fuliginous.—Basidia 22–29 × 7.5–8.3 μ, 4-spored. Cystidia very numerous on both edges and sides, 33–48 × 8–16 μ, those of the gill edges definitely tending towards the lower, those of the sides towards the higher measurements, as far as length as well as breadth is concerned, ventricose to ampullaceous, and if ampullaceous, the apex more than half as broad as the basal thickening, broadly rounded at the tip, not exuding incrusting material, thin-walled, even easily collapsing. On the edges, there are also some vesiculose pseudoparaphysis-like bodies.—Hyphae hyaline but incrusted by a spadiceous pigment in the hymenophoral trama which is regular, clamp connections present.—Epicutis a pavement-like hymeniform layer of hyaline clavate elements e.gr. 40 × 20 μ which are often covered over large stretches by a cutis-like velar layer which is hyaline below and brown (by a membrana pig-

ment) above, consisting of thin-filamentous hyphae. Hypodermium a cutis of brown elongate elements.

Under *Nothofagus pumilio*, fall fruiting.

Material studied: ARGENTINA: Neuquén: Above Puerto Manzano, "Cerro Cortinario", 11–IV–1963, Singer M 3371 (BAFC).

In spite of a few minor differences, we believe that our fungus is specifically identical with the one collected by Romagnesi in France, where, apparently, it is rare, as it is with us.

Psathyrella tristis Sing. spec. nov.—Pileo sordide atro-griseo, hygrophano, subpallescente, longe pellucide striato, campanulato vel obtuse conico, haud umbonato, 11–20 mm lato, 8–14 mm alto.—Lamellis atro-sepiaceis, acie albis, sat latis sed haud ventricosis, subconfertis, adnatis.—Stipite albo, glabro vel subglabro, recto vel subflexuoso, haud radicante, aequali, 40–60 × 1.5–2 mm; velo nullo viso.—Contexto inodoro.—Sporis 7.3–8.3 × 4–5 μ, ellipsoideis, levibus, atrosepiaceis, manifeste poro germinativo truncatis.—Hymenio e basidiis et cystidiis efformato. Basidiis tetrasporis, clavatis. Cystidiis ± 36 × 11.5–16.5 μ, apice 4–5 μ latis, plerumque ad apicem extremum redilatatis (–6.7 μ diam.), tenui-tunicatis et haud incrustatis, hyalinis.—Hyphis in tramate hymenophorali hyalinis, fibuligeris.—Epicute pilei e sphaerocystis hyalinis efformatis. Hypodermio ex elementis cutem efformantibus, fortiter pigmento spadiceo incrustatis, plus minusve elongatis constante.—Ad terram sub-arenosam in apricis, gregatim, autumno. Typus: ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 7–V–1964, Singer M 3978 (BAFC).

Psathyrella laevissima (Romagnesi) Sing. comb. nov.

Drosophila laevissima Romagnesi, Bull. Soc. Linn. Lyon 21: 155. 1952.

Var. **nothofagi** Sing. var. nov.—Stipite sublongiore (37 × 3 mm), albido; sporis 6–7.5 × 4–4.5 μ, saturate castaneis, ovoideis vel ellipsoideis, poro parvo instructis; cystidiis tenui-vel subtenui-tunicatis, obtuse vel subobtuse subulatis, 27–32 × 7.5–13 μ, moderatim numerosis; cheilocystidiis versiformibus, interdum ventricosis, interdum vesiculosis, pallide stramineis, 17–31 × (5)–12–21 μ, cystidiis frequenter immixtis; tramate hymenophorali regulari, dilute fuscidulo e pigmento membranali; epicute pallide brunneola. Ceterum cum diagnose Romagnesii l.c. concordat. Typus varietatis: CHILE: Valdivia: Cuesta Santa Elvira, 15–V–1967, Singer M 6918 (SGO).

Psathyrella chiloensis Sing. spec. nov. — Pileo atrobrunneo, hygrophano, breviter pellucide striato, glabro, levi, ± 28 mm lato, 9 mm alto, in adultis

humili-conico subobtuso.—Lamellis atrobrunneis, confertissimis, angustis, adnatis vel adnexis.—Stipite albido vel sordide brunneolo, levi, glabro, nudo vel subnudo, aequali, ± 30 × 2 mm; mycelio basali albo, strigoso; velo in stipite adulto vix manifesto, in pileo sub lente nonnullis fibrillis sericeis visibilibus.—Contexto subconcolori superficiebus, inodoro, fragili. —Sporis 5.5–6.7 × 2.8–3.7 μ, ellipsoideis, poro germinativo lato, hyalino, apicali ornatis, levibus, applanatione et depressione suprahilari destitutis sed interdum ad latus interius applanatis, numquam reniformibus.— Hymenio e basidiis et cystidiis efformato. Basidiis 15 × 5 μ, tetrasporis. Cystidiis ad latera et acies lamellarum praesentibus, 20–30 × 11–14 μ, vesiculosis vel ventricosis, mucronatis vel non mucronatis, hyalinis.— Hyphis fibulatis, in tramate hymenophorali regulari brunneolis.—Epicute pilei e catenulis cellularum membrana brunneola vel incrustatione lenissima brunneola gaudentibus efformata.—Ad truncum putridum inter muscos epiphyticos, autumno. Typus: CHILE: Chiloe: Pudeto, Maio 1967, leg. M. Singer & P. Hernandez, comm. Singer M 6792 (SGO).

Panaeolina

PANAEOLINA FOENISECII (Pers. ex Fr.) Maire, Publ. Junta Cienc. Nat. Barcelona, p. 109, 1933.

A description of our Chilean material can be found in Singer & Moser, Mycopath. & Mycol. Appl. 26: 162. 1965. This material differs from European (Scotland August 1964, Singer C 4023, BAFC) and North American (Massachusetts, June 21, 1942, Singer, FH; et al.) material in the shape of the cheilocystidia.

Panaeolus

PANAEOLUS MOELLERIANUS Sing., Lilloa 30: 123. 1960.

Description and illustration see there.

PANAEOLUS CONVEXULUS Sing. in Singer & Moser, Mycopath. & Mycol. Appl. 26: 161. 1965.

Description see there.

PANAEOLUS RICKENII Hora, Trans. Brit. Mycol. Soc. 43: 454. 1960.

Our material differs in certain aspects from the type description, especially in the shape of the cheilocystidia (which Ricken indicates as "filamentous" which may be interpreted as the apical portion of the ampullaceous cell).

Pileus blackish fuliginous, hygrophanous, fades to dirty pallid to pale ochraceous with ochraceous fuscidulous or brown ("cocoa" M & P) center, not or scarcely transparently striate, smooth, glabrous, campanulate to conic-campanulate, often with a rather acute papilla, or rounded above but when dried tending to develop a papilla, 9–12 mm broad, 10–12 mm high; veil none.—Lamellae black, close, ascendant, adnate, broad.—Stipe reddish brown to purple black ("kis kilim" to "Cordovan"), with initially white, later merely somewhat lighter colored apex, entirely and densely pallid pruinate, equal or very slightly tapering upwards, with or without a subbulbous base, 58–80 × 1.5–2 mm, base at times up to 2.5 mm; veil none.—Context thin, inodorous.

Spores 12–15.7 × 9.5–10.8 × 7.5–8.2 μ, mostly 14–15 μ long, slightly lemon shaped, not rhombic, but more or less lentiform, sepia black, smooth, with broad truncate germ pore.—Basidia 22–27 × (8.7)–11.7–12.7 μ, 4-spored. Cystidia, none. Cheilocystidia mostly ampullaceous, fewer ventricose, about 17.5–36.5 × 8 μ, most frequently with ventricose base and long-effilate equal (not capitate) apex.—Epicutis hymeniform, with spherocysts which are subisodimetric or globose and mostly pedicellate, 22–23 × 16.5–17 μ, hyaline; some dermatocystidia among them, these having the shape of the cheilocystidia, 32–36 × 5.8–7.8 μ, apex in middle portion 2.2–4 μ across, obtuse, hyaline to pale fuscidulous.—Hyphae with clamp connections, hymenophoral trama regular, pale ochraceous brownish.—Dermatocystidia of stipe numerous, much like the dermatocystidia or the pileus or the cheilocystidia but somewhat more variable.

In open places and near trees in herbaceous vegetation, mostly in summer.

Material studied: ARGENTINA: Neuquén: Villa Angostura, 12–III–1963, Singer M 3518 (BAFC).—Tucumán: Infiernillo, 3000 m alt., 10–III–1955, Singer M 2270 (LIL).—Also observed in Tierra del Fuego.

PANAEOLUS ACUMINATUS (Schaeff. ex Secr.) Quél., Champ. Jura Vosg. p. 239. 1872.

We use the binomial in the sense of Hora:

Pileus copper brown to chestnut ("Hindu" M & P) and more fuliginous ("moose") towards the margin, more rarely uniformly colored fuscous, rarely with a slight olive tinge, eventually fuliginous all over, dried blackish chestnut to fuliginous ("bark" to "montella" M & P), or merely dark brown, hygrophanous, fading to a very pale buffy cinnamon, sordid ochraceous or light brown, in an intermediate state mostly dark near margin and less dark in center, glabrous, moist to viscidulous in wet weather, smooth, little transparently striate or not striate, if striate, striation up to one third up from the margin, which corresponds to the

dark zone in semi-dry condition, conic or conic-campanulate to campanulate rarely campanulate-convex, not repand even in age, with initially incurved margin, 11–20 mm broad, 8–15 mm high; veil none.—Lamellae gray, the black-gray-marbled, with white edge, ventricose and broad, adnate.—Stipe varying from light brown to chestnut-fuliginous, mostly chocolate brown ("chocolate" M & P), with a pallid pruina all over, often with watery hyaline droplets, equal or subequal, not bulbous below, evelate, not more than three times larger than the diameter of the pileus, 30–50 × 1.3–2.2 mm.—Context thin, odorless.

Spores 11.5–14 × 7.5–11 × 6.5–8.5 μ, lemon shaped, almost rounded-rhombic in frontal view, lentiform, much narrower in profile in frontal view, smooth, deep spadiceous-fuliginous, with broad truncate germ pore.—Basidia 21–29 × 9.5–12 μ, all four-spored, or (2–3–)4-spored. Cystidia, none. Cheilocystidia 23–40 × 5–11 μ, apex 16–28 × 2.5–4 μ, at times tip thickened slightly (2.8–5.3 μ), not acute, thin-walled, hyaline, sometimes with a fuscidulous base, making edge heteromorphous.—Hyphae pigmented (with a slight fuscous incrusting pigment), so also in the subregular hymenophoral trama where the elements are interwoven and dense; subhymenium paler to subhyaline, of smaller elements; clamp connections present.—Epicutis of pileus hymeniform.—Stipe pruina consisting of numerous dermatocystidia, these like the cheilocystidia, but either with a longer thinner neck, or larger, often subcapitulate or claviculate at the tip or without swollen base gradually tapering from base to tip, etc.—On earth in open places such as meadows, pastures, generally in small groups, summer and fall.

Material studied: CHILE: Valdivia: Chivería, 10–V–1965, Singer M 5737 (BAFC).—Mirador, 1000 m alt., 29–IV–1967, Singer M 6549 B (SGO).—AUSTRIA: Tirol: St. Leonhard, Pitztal, 1450 m alt., 21–IX–1960, Singer C 2389 (BAFC).—GREAT BRITAIN: Scotland: Bridge at Oreby, 5–VIII–1964, Singer C 4019 (BAFC).

PANAEOLUS SPHINCTRINUS (Fr.) Quél., Champ. Jura Vosg. p. 121. 1872. Var. *SPHINCTRINUS*.

A description of this common species see Singer, Lilloa 30: 118. 1960.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 5–IV–1963, Singer M 3271 (BAFC).—19–III–1963, Singer M 3076 (BAFC).—Lake Correntoso, 12–III–1963, Singer M 3514 (BAFC).—CHILE: Valdivia: Chivería, 29–III–1963 (BAFC).—MEXICO: Oaxaca: Huautla de Jimenez, July 1938, leg. Schultes (FH).—1957, Singer M 1505 (LIL).—Also numerous collections from Europe.

Var. *MINOR* (Fr.) Sing., Lilloa 30: 119. 1960.

Description and illustration, see Singer, l.c.—Our South American material comes from ARGENTINA: Neuquén: Puerto Manzano, 18–IV–1965 (SGO).

PANAEOLUS RETIRUGIS (Fr.) Gillet, Hymenom. p. 621. 1874.

We accept this species in the sense of Ricken (non Bresadola):

Pileus buff or dirty ochraceous-flesh color, rugose, glabrous, with smooth (i.e. not sulcate or striate) margin which is appendiculate by the membranous veil, but not denticulate, at first incurved, campanulate-ovate or campanulate-conic and then often almost truncate, neither papillate nor umbonate, or seemingly becoming obtusely umbonate when the margin becomes more repand, eventually sometimes convex but not applanate or depressed, 12–18 mm broad, occasionally broader.—Lamellae gray, then somewhat mottled with black (from spores), with white edge, rather broad, moderately close to subdistant, subventricose, adnexed to adnate.—Stipe buffish to pale avellaneous, slightly pruinate, solid, eventually tubulose, equal or with slightly enlarged base, 35–48 × 2–5 mm; veil none.—Context white, towards peripheric zone concolorous with surface, inodorous.

Spores 10.8–13.3 × 7.2–9 × 6.5–7.5 μ, lemon shaped, lentiform, smooth, blackish brown, with broad truncate germ pore.—Basidia 4-spored, in young specimens also some 1–3-spored ones present, hyaline, few with applicate scale of pigment, 22.5–36 × 8.3–12.7 μ. Cystidia none. Cheilocystidia 38–42 × 6–6.7 μ, ampullaceous, apex long and thin (2–4.8 μ diam.), at tip often broadened (4.8–6 μ diam.), hyaline. Some cystidioles may occasionally appear among the basidia, but these are small and inconspicuous, filled with fuscous pigment, basidiiform, e.gr. 16 × 3.2 μ.—Hyphae with clamp connections, in hymenophoral trama regularly arranged, brown (with membranal and intracellular pigment), interwoven, filamentous, multi-septate. Oleiferous hyphae brown, in trama of pileus rather numerous.—Epicutis of pileus an eventually polystratous layer of spherocysts and subisodiametric elements.—Dermatocystidia on stipe present.

On dung among herbaceous vegetation, spring and fall.

Material studied: ARGENTINA: Buenos Aires, Sierra de la Ventana, Club Hotel, 15–XI–1962, Singer S 341 (BAFC).

PANAEOLUS PHALAENARUM (Fr.) Quél., Champ. Jura Vosg. p. 121. 1872.

Our South American material has the following characteristics:

Pileus pale beige-ocher to brown, subviscid at least in the center, and in wet weather, either smooth or rugose (mostly in marginal region), not

hygrophanous, tending to become cracked and fissured, glabrous, with the margin at first incurved and long remaining curved towards the stipe, at first vesiculose to campanulate, later conic or campanulate or vesiculose with subacute apex, more rarely hemisphaerical, (5)–10–30 mm broad; veil in denticulate appendages of the margin but the processes of the latter consisting only partly of veil, in some, however, the margin is entire and the veil slightly appendiculate, eventually disappearing.—Lamellae gray, then mottled with black, eventually entirely black, with slightly pallid edge, close to subclose, broad, adnexed.—Stipe concolorous or light reddish brown to cinnamon, striate at apex or smooth, pruinate but glabrescent, hollow, often ventricose but soon equal or subequal, more rarely tapering upwards, 60–95 × 2–4 mm; veil white, aside from the appendiculate veil of the pileus, often also appearing as an apical very narrow annular belt which soon becomes black dusted by the spores, fugacious.—Context moderately thin to rather thin in the pileus, inodorous.

Spores 13.5–17 × 9.5–11.5 × 7.7–9.4 μ, lemon shaped when seen frontally, elliptic to elliptic-oblong when seen in profile, smooth, black or fuliginous, opaque, with broad, hyaline truncate germ pore.—Basidia 22–34 × 9.5–14 μ, 4-spored, hyaline. Cystidia, none. Cheilocystidia 14–39 × 5.3–9 μ, rather variable in shape, but generally with broadened clavate or capitate apex and with or without a basal ventricose swelling, if so, constricted in the middle or with a more elongated thin portion between the thickening of the apex and the base, hyaline, but often in the lower portion brownish, even occasionally somewhat brown incrusted, capitulum, if present 4.5–9 μ across. Pseudoparaphyses here as in the preceding species present but scattered, e.gr. 20 × 10 μ.—Hyphae of the hymenophoral trama having rather pale fuscous walls and clamp connections, not running parallel with each other.—Epicutis of pileus cellular, subhymeniform, hyaline or subhyaline. Hypodermium of rather narrow hyphae with brown pigment incrustations, a rather narrow cutis, slightly deeper colored than the context underneath.

On and near dung in open pampa or under scattered trees, rarely on earth, on rich soil in shaded places.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, at 900 m alt., 8–IV–1963 (BAFC).—Buenos Aires: Sierras de Tandil: Finca Pascuala, 16–XI–1962, Singer S 362 (BAFC).—Garibaldi, 30–V–1949, Singer S 49, S 50 (BAFC).

PANAEOLUS ULIGINICOLA (Speg.) Sacc. Syll. F. 9: 148. 1891.

Pileus dirty avellaneous-pallid, eventually somewhat more fulvous-brownish, not sulcate, subsmooth to very slightly rugulose, not viscid, not

hygrophanous, not sulcate or striate, campanulate-semiglobate, obtuse, 16–17 mm broad, 5–11 mm high; veil none.—Lamellae pale grayish, then fuliginous gray, with white edge, ascendant later horizontal, subclose, broad, ventricose, arcuate-adante.—Stipe pale grayish, pallid pruinate, in young specimens entirely dirty pallid, apex remaining pallid, equal or slightly tapering downwards, 31–52 × 2 mm; veil none.—Context inodorous.

Spores 11.7–14 × 8–10.3 × 7.3–8.2 μ, not rhombic when seen frontally, ellipsoid when seen laterally, lentiform, smooth, dark fuliginous, with truncate germ spore.—Basidia (16)–10–22 × 9–11.7 μ, 4-spored. Cystidia, none; cheilocystidia 33–37 × 9.5–10 μ, ventricose, with or without a constriction in the middle, sometimes clavate, often more or less ampullaceous but with rather short and broad apex which is always rounded, thin-walled, hyaline; edges heteromorphous.—Hyphae with clamp connections.—Epicutis of pileus cellular.—Dermatocystidia present on stipe.

On rather open wet ground near water, scarcely gregarious but at times in large numbers.

Material studied: ARGENTINA: Neuquén: Villa Angostura, Selva Triste, 12–III–1963, Singer M 3515 (BAFC).

Anellaria

ANELLARIA SEMIOVATA (Sow. ex Fr.) Pearson & Dennis, Trans. Brit. Myc. Soc. 34: 185. 1948.

This species—see Bull. Soc. Myc. Fr. 48: Atlas pl. 51, 52. 1932 — is common in the far South and in the higher mountains following the Andes towards the North.

ANELLARIA SEPULCHRALIS (Berk.) Sing., Lilloa 22: 475. 1951.

This species, also known as *Panaeolus antillarum* sensu Dennis, Pegler, *Panaeolus solidipes* (Peck) Sacc., and *Panaeolus teutonicus* Bride & Métrod differs from the preceding one almost exclusively in the absence of an annulus. It occurs in the warmer parts of the northern zone of our region, but more rarely than in the subtropics and tropics. *P. ovatus* (Cke. & Mass.) Sacc. from Australia is apparently identical.

Conocybe

CONOCYBE JURUENSIS (Henn.) Sing., Lilloa 22: 485. 1951.

Pileus light ochraceous brown to brown ("kis kilim", "oak", 14–B–11), often paler brown between striae or in the whole marginal region than in the central region and on the striae, hygrophanous, faded evenly pale buff, glabrous, not viscid, transparently striate and only slightly sulculate to distinctly sulcate over half the radius or up to the umbo, hemisphaerical or convex, later applanate, often subumbonate to papillate, rarely quite obtuse, eventually sometimes with recurved margin, 2–8 mm broad; veil none.—Lamellae cinnamon tawny, ochraceous brown ("Pekinese", "sayal br." M & P), narrow to broad, often ventricose, not ascendant, close or subclose (more than 11 through-lamellae), free, rounded-subfree, or occasionally almost adnate.—Stipe pale cinnamon brown to umber brown below, whitish or pale buff at apex, eventually sometimes fuliginous at base, glabrous to very finely pruinate all over (always so under a lens), eventually glabrescent equal and filamentous or very slightly thickened towards the base or with somewhat bulbous base, often shining when dry, 8–23 × 0.2–0.9 mm; veil none; basal mycelium tomentose, white.—Context very thin, inodorous; taste mild.

Spores 4–6–(7) × 3–4 × 2.8–3.7 μ, broadly ellipsoid to fusoid-ellipsoid, in profile often with applanate inner side, slightly lentiform to not lentiform, with apical truncate or not truncate, sometimes even subpapillate germ pore, but always with distinct germ pore, varying from very finely punctate to finely verrucose by an exosporial ornamentation, melleous-ochraceous to rusty brown, the ornamentation very slightly to very distinctly deeper rust than the episporium.—Basidia 10–14 × 5.5–7 μ, 4-spored. Cystidia none; cheilocystidia of *Conocybe*-type, 11–24 × 3–10 μ, capitulum 3–5.6 μ across, neck 1–2 μ across, hyaline, rarely pale brownish. No needle-crystals in NH_4OH mounts.—Hyphae with clamp connections.—Epicutis of pileus hymeniform, of vesiculose elements some of which may have a mucro; dermatocystidia of pileus capitate like the cheilocystidia, 17–28 × 7.5–10 μ, capitulum 3.5–6.5 μ diam.—Dermatocystidia of the stipe capitate like the cheilocystidia, much like those of the pileus.

Mostly on dead dictotyledonous tree trunks, but sometimes on naked soil in ditches in the forest, solitary to densely gregarious.

Material studied: CHILE: Llanquihue: Peulla, up to 400 m alt., 20–III–1959, Singer M 1925 (BAFC).—BOLIVIA: Pando: Manuripi: Con-

quista, 23–III–1956, Singer B 2161 (LIL).—La Paz: Nor-Yungas: Rio Yariza, 23–II–1956, Singer B 1424 (LIL).—BRAZIL: Amazonas: Rio Juruá, June 1901, leg. Uhle, Herb. Bras. 2701 (FH), typus.—Pará: Estancia Pirelli, near Belem, 7–VI–1966, Singer B 4239 (BAFC).

This species is principally tropical and occurs in the South only up to 400 m alt., and very rarely. The type and most other collections are from dead wood, but one collection (B 4239) is from earth. The type has perhaps more contrasting ornamentation than the Chilean material, while the other collections are intermediate. While there are other species with exosporial ornamentation in other parts of South America, this is the only one that enters our region.

CONOCYBE STRIATIPES (Speg.) Sing., Lilloa 22: 205. 1951.

Pileus brownish or "yellow ocher" on center, ochraceous to nearly pallid on the margin, glabrous, subviscid to viscid, smooth, dried at times slightly sulculate, campanulate to broadly campanulate, 17–30 mm broad; veil none.—Lamellae rusty, medium broad, close, with pallid edges.—Stipe white to brownish melleous pallid inside and outside, often becoming light brown when dried, finely longitudinally striate, finely pruinate at least in upper portion when fresh, glabrescent, equal, not bulbous below, 90–95 × 1.7–2 mm; veil none.—Context white to eventually brownish-melleous-pallid in stipe, inodorous.

Spores 13.5–17.3 × 8–9.8 μ, ellipsoid, well pigmented, smooth, with broad truncate germ pore, with thick complex wall.—Basidia 16–24 × 9.8–11.7 μ, 2-spored. Cystidia none; cheilocystidia 14.5–30 × 7–11.5 μ, capitulum 3–6 μ across, neck 1.3–1.5 μ across, often main body with two apical stalked capitula seen, hyaline or more rarely melleous. No needle crystals in ammonia mounts.—Hyphae in hymenophoral trama arranged as in *Conocybe tenera,* often strongly pigment incrusted, with clamp connections. Hyphae of stipe parallel.—Epicutis of pileus hymeniform.—Dermatocystidia of stipe in dense clusters, much like the cheilocystidia, 11.5–22.5 × 6.5–8 μ, capitulum 2.8–5 μ across, sometimes capitulum stalked and rising directly from basal hypha.

On the ground among grasses and herbs, in open and shaded places.

Material studied: CHILE: Valdivia: Hueycolla, 30–III–1963, Singer M 3250 (BAFC).—ARGENTINA: Buenos Aires: La Plata. Leg. Spegazzini (LPS), typus.—Tucumán: Anta Muerta, 10–IV–1949, Singer T 402 (LIL).

This is apparently the 2-spored form of Kühner's *Conocybe leucopoda.* The typical form of the latter differs in 4-spored basidia and rugose, perhaps more hygrophanous pileus, and somewhat smaller spores. What

we consider mixed and 4-spored forms of *C. striatipes* has not been found in our region.

CONOCYBE TENERRIMA Sing., in Sing. & Digilio, Lilloa 25: 292. 1952.

Var. **tenerrima** of this species has not been observed in our region. But we give a description of

Var. **monticola** Sing. var. nov.—Pileus ochraceous brown or brown ("kis kilim" M & P), with slightly deeper center and striae and paler between striae, hygrophanous much paler when faded, not viscid, glabrous, over three quarters of radius transparently striate and more or less sulcate, campanulate, sometimes obtusely conical, semiglobate, or convex, but mostly campanulate, 7–18 mm broad, 6–10 mm high, veil none.—Lamellae brownish ochraceous or brown ("tiffin" M & P), moderately broad to rather broad, ascendant, close or subclose, adnate.—Stipe concolorous with pileus or with deeper colored base (13–K–9, M & P) and/or paler apex, glabrous to very finely pruinate, equal or tapering upwards, sometimes with a slight bulb (up to 3–4.5 mm broad), more often without bulb, 35–70 × 0.8–2 mm; veil none.—Context thin, odor none.—Spore (11)–12.5–15.5 × 7.2–9–(9.5) μ, ellipsoid, rarely up to (16–17 μ) long, mostly 13.5–15 μ long, well colored, smooth, deep rust in ammonia as well as in KOH, with broad truncate germ pore.—Basidia 13.7–26 × 7.5–13.5 μ, 4-spored. Cystidia none; cheilocystidia 15.5–27.5 × 3.5–11 μ, capitulum 2.7–5–(7) μ. Needle crystals constantly absent in ammonia mounts.—Hyphae with clamp connections.—Epicutis cellular.—Dermatocystidia of stipe in bunches, most or all capitate, very few ampullaceous or mucronate or clavate, much like the cheilocystidia.—On the earth and on dung in open and slightly shaded places. Typus of the variety: ARGENTINA: Tucumán, Tafí del Valle, 1900 m alt., 10–I–1950, Singer T 842 (LIL).—Paratypus: CHILE: Valdivia: El Molino, 25–III–1955, Singer M 2062 (BAFC).—Llanquihue: Between Puerto Montt and S. Agustín, 8–V–1967, Singer M 6768 (SGO).

A var. *tenerrima* differt sporis majoribus. Typus (T 842) in LIL conservatus.

The spore measurements as given in the original description include both varieties. In the type variety, the spores are 11–12.3–(13.7) × 4.8–7.5–(9) μ.

CONOCYBE SEMIGLOBATA (Kühner) Kühn. & Romagnesi ex Singer, Mycologia 51: 395. 1959.

Description see Kühner, Encycl. Mycol. 7: 79. 1935. Our collections in South America refer to the "*forme microspore*" mentioned by Kühner l.c., p. 81:

Material studied: ARGENTINA: Santa Cruz, Puerto Deseado, km. 20, leg. I. Zizich, April 1963 (BAFC).—Buenos Aires: San Clemente de Tuyú, 24-X-1965, Singer S 555 (BAFC).

Conocybe affinis Sing. spec. nov.—Pileo ochraceo-fusco, hygrophano, dehydratatione grisello-ochraceo, cremeo-grisello exsiccatione, pellucide striato in humidis, glabro, campanulato, 5.5–19 mm lato; velo nullo.—Lamellis sordide ochraceis, moderatim confertis, ascendentibus, 1 mm latis.—Stipite melleo, apicem versus albido-hyalino, ad ipsam basin plerumque fusco ("Clove" M & P), in exsiccatis toto pallide brunneolo, vix striato, ex integro pruinato, aequali ebulboso, 30–35 × 0.5–0.7 mm; velo nullo.—Contexto tenui, inodoro.—Sporis 10–12.3 × 6–7 μ, ellipsoideis, laete pigmentatis ferrugineis, levibus, poro germinativo lato truncato munitis.—Basidiis 18–22 × 9–10.3 μ, tetrasporis vel paucis bisporis intermixtis. Cystidiis nullis; cheilocystidiis 15.5–21.5 × 6.5–9 μ, capitulo 2.7–4.2 μ. Reactione ammoniaci crystallis haud formatis.—Hyphis fibuligeris.—Epicute pilei ex elementis vesiculosis subhymeniformiter vel hymeniformiter dispositis efformata.—Dermatocystidiis stipitis, omnibus vel omnibus fere capitatis, 15–25 × 6–10.5 μ, capitulo 2.8–4.8 μ, hyalinis vel brunneolis, numerosis, haud capitatis nullis vel subnullis.—Ad terram in hortis, inter gramina aut herbas. Typus: ARGENTINA: Tucumán: 10–XI–1950, Singer T 1020 (LIL).—Mendoza, Parque General San Martín, Capital, 30–I–1939, Ruiz Leal 5638 (BAFC), paratypus.—Species *C. tenerrimae* et *C. striatipedi* affinis et in America temperata possibiliter introducta.

CONOCYBE MACRORRHIZA (Speg.) Sing., Lilloa 23: 205. 1950.

Description see Singer, Mycopath. & Mycol. Appl. 34: 134. 1968.

CONOCYBE CRYPTOCYSTIS (Atk.) Sing., Sydowia 6: 402. 1952.

Description and illustration see Kühner, Encycl. Mycol. 7: 86. 1935, also Singer, Sydowia 7: 208. 1953 (the former as *C. pubescens*, the latter as *C. megalospora*).

Material studied: ARGENTINA: Tierra del Fuego: Estancia Nueva Argentina, 22–II–1950, Singer M 430 (LIL).—10–II–1950, M 145 (LIL).—Neuquén: Quetrihué, 16–V–1952, Singer M 673 (LIL).—20–V–1952, Singer M 773 (LIL).—Rio Negro: Lago Nahuel Huapí, Bahía Lopez, 26–IV–1965, Singer M 5199, M 5302 (BAFC).—Catamarca: Path from Minas Capillitas to Cerro Negro, 4000 m alt., 3–III–1952, leg. H. Sleu-

mer, comm. Singer T 1933 (LIL [1]).—CHILE: Valdivia: Chivería, 29–III–1963, Singer M 3231 (BAFC).—Cordillera Pelada, near Mirador, 1000 m alt., 5–V–1965, Singer M 5507 (BAFC).—Maule: "El Corte", 3–VIII–1967, Singer M 7210 a (SGO).—U.S.A.: California: Nov. 20, 1901, C. F. Baker, Pacific Slope Fungi 127 (NYS), typus.—GERMANY: Potsdam, J. Schäffer, (LE), isotypus of *G. megalospora*, possibly not belonging here [2]).

Conocybe xylophila Sing. spec. nov.—Pileo cinnamomeo-ochraceo ("macaroon" M & P), hygrophano, multum pallidiore in dehydratis, per tres quartas partes radii pellucide striato in humidis, haud viscoso, conico-convexo et obtuso, demum repando vel margine plus minusve recurvato, 8–9 mm lato; velo nullo.—Lamellis brunneolis ("oakwood" M & P), magis ferrugineis in siccis, in maturis horizontalibus, latis, subconfertis, adnatis. —Stipite albo, macroscopice glabro, cavo, aequali, 17–19 × 1 mm; velo nullo.—Contexto tenui, inodoro.—Sporis 7.5–8 × 5 μ, ochraceo-ferrugineo, moderatim intense coloratis in KOH, membrana crassa complexaque instructis, levibus, poro germinativo lato praesente.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 12–13.5 × 6.5 μ vel paullum maioribus, tetrasporis. Cheilocystidiis 11.5–19 × 7–8.5 μ, capitulo 2.5–4 μ, hyalinis, nonnullis brunneolo-ochraceis; cystidiis nullis.—Epicute hymeniformi in pileo, ex elementis vesiculosis ochraceo-fuscis efformata et dermatocystidiis interruptis.—Dermatocystidiis stipitis aut vesiculoso-ventricosis et apice abrupte capitatis cheilocystidiorum et dermatocystidiorum pilei modo aut simpliciter mucronatis et effilatis sed haud capitatis aut ventricosis vel subvesiculosis et obtusis, semper nonnullis repraesentantibus omnium typorum in omnibus acervulis congregatis praesentibus et praeterea etiam pilis longissimis hyphalibus hyalinis interspersis; basibus cheilocystidiorum et dermatocystidiorum et septis hypharum fibulis munitis.—Ad truncum muscosum in silva nebularum loco umbroso. Typus: CHILE: Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6517 (SGO).

CONOCYBE PUBESCENS (Gill.) Kühner, Encycl. Mycol. 7: 85. 1935.

We understand this fungus in the sense of Kühner 1949 and Kühner & Romagnesi 1953. A description of this species was given by Singer, Sydowia 72: 209. 1953. Material studied see there (Tierra del Fuego).

There is complete confusion about the synonymy of this fungus. The type of *C. cryptocystis* has the stipe covering as described there by Küh-

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[1]) See comments on this collection under *C. pubescens* below.

[2]) See comments on this collection under *C. pubescens* below.

ner for *C. pubescens* 1935 (rather numerous capitate dermatocystidia) and the larger spores agree well with his description of var. *pseudopilosella*. As stated by Kühner himself, there are transitions between the two varieties indicated by Kühner so that there is no reason why these should be separated as autonomous species inasmuch as the habitat is not constantly different. Therefore, according to our rather ample experience with this complex, *C. cryptocystis* has as synonyms *C. pseudopilosella* (Kühn.) Kühner & Romagnesi and *C. pubescens* (Gill.) Kühner sensu Kühner 1935 as well as *C. subpubescens* Kühner and, I am quite certain, *C. megalospora* whose type I have studied before the clear separation of the two species by Kühner 1949, and which I have cited from material received by J. Schäffer, under *C. cryptocystis*.

It is quite obvious, in contrast to what Orton in Dennis, Orton and Hora (New Check List of Brit. Agar. and Boleti, p. 182) state, that the species of this complex are not to be separated by spore size and habitat, but by other characters, in the first place the shape of the dermatocystidia of the stipe, and that forms belonging to *C. cryptocystis* may have quite large spores.

One such case is that of my high-andine collection T 1933 (cited under *C. cryptocystis*, above) which has spores 15.5–22–(26) × 8.2–13.7 μ and basidia 23–30 × 11–12.5 μ, 2–(3)–4-spored, and numerous capitate dermatocystidia on the entire surface of the stipe. This is obviously an alpine form, or race. It should be noted that its spores are still larger than those of *C. megalospora* J. Schäffer.

Conocybe tetraspora Sing. spec. nov.—Pileo ochraceo-brunneo vel aquose brunneo in humidis, hygrophano, dehydratatione usque ad cremeum umbone ochraceo pallescente, glabro, haud viscido, haud sulcato vel vix sulcatulo, sed in humidis usque ad 5/6 radii pellucide striato, conico sed obtusato, demum interdum applanato, 10–22 mm lato; velo nullo.—Lamellis pallide ochraceo dein sporis ferrugineis, sublatis, confertis, adnatis.—Stipite pallide brunneo, frequenter basin versus intensius brunneo, pruinoso-pubescente ex integro, aequali vel basi subincrassato, haud bulboso, 16–65 × 1–2 mm; velo nullo.—Contexto inodoro.—Sporis 9.5–11.5 × 6–7 μ, ellipsoideis, levibus, poro germinativo lato, truncato, intense ferrugineis in NH_4OH and KOH.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 13–15 × 8–9 μ, tetrasporis, rarius paucis bisporis intermixtis. Cheilocystidiis (14)–17–20 × 6–8.5 μ, capitulo 3.5–5 μ diam.; cystidiis nullis. Crystallis ammoniaci ope haud formatis.—Hyphis fibuligeris.—Epicute pilei hymeniformi.—Dermatocystidiis stipitis et numerosis capitatis (11–24 × 4–8 μ, capitulo 2.5–5 μ diam.) et numerosis haud capitatis praesentibus, in nonnullis acervulis

capitatis, in aliis haud capitatis praedominantibus, his e.gr. 24 × 9 μ, interdum mucronato-apiculatis. Pilis hyphalibus longis sat sparsis.—Ad terram inter Gramineas nec non in terra adusta nuda. Typus: ARGENTINA: Buenos Aires: San Clemente de Tuyú, 21–X–1965, Singer S 552 (BAFC). —Paratypus: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 27–IV–1965, Singer M 5311 (BAFC).— *C. ambiguae* (Kühner) Sing. affinis sed tetraspora species.

CONOCYBE RICKENII (J. Schäffer) Kühner, Enc. Myc. 7: 115. 1935.

As for a description and illustration of this species see Kühner, Encycl. Mycol. 7: 115. 1935. As for the nomenclature of this species, see Singer, Agaricales in modern Taxonomy 2nd. ed. p. 524, 1962. Our collections cited below refer to f. *bispora.*

Material studied: ARGENTINA: Numerous collections, especially from Mendoza, also from other provinces.—CHILE: Juan Fernandez: Masatierra: Plazoleta del Yunque, 230 m alt., on soil, leg. Kunckel, comm. Sparre F 72, 25–III–1955 (LIL).—Numerous collections from Europe and Asia (including the Altai Mts.).

Conocybe fuscimarginata (Murr.) Sing. comb. nov.

Galerula fuscimarginata Murr., Lloydia 5: 148. 1942.

Singer & Digilio (Lilloa 25: 301. 1952) have described this species fully, considering it a tetrasporous form of the preceding species and describing it under the binomial *Conocybe siliginea* (sensu Bresadola).

Further collections have shown the fresh pileus to be "Aztec" (M & P), i.e. clay brown in many cases, fading to much paler, and often as small as 5 mm across. No crystals of the characteristic needle shape were formed in ammonia mounts. We have compared the type from Florida.

Material studied: ARGENTINA: Neuquén: Rincón, 13–III–1963, Singer M 3532 (BAFC), a small form, growing on scattered dung.—Buenos Aires: Near La Plata, 26–V–1949, Singer S 30 (LIL).—BOLIVIA: Cochabamba, 2560 m alt., Jan. 1948, leg. M. Cárdenas 252 (LIL), on mixture of soil and sawdust.—U.S.A.: Florida: Alachua Co., Gainesville, 12–V–1939, Murrill F 15977 (FLAS), typus.

CONOCYBE LACTEA (Lange) Métrod, Bull. Soc. Mycol. Fr. 61: 46. 1940.

Description see there and in Kühner, Encycl. Mycol. 7: 121. 1935 (as *C. lateritia*), and, for South American material, in Lilloa 25: 307. 1952.

This species has not been found in the Southern region of Argentina and Chile but was observed south of Mendoza; its southern limits are unknown.

CONOCYBE PILOSELLA (Pers. ex Fr.) Kühner, Encycl. Mycol. 7: 92. 1935.

Description and illustration see there.

Material studied: ARGENTINA: Rio Negro: Cerro Catedral, 25–IV–1955, at 1200 m alt., on wood of *Nothofagus pumilio*, Singer M 5189 (BAFC).—Near Santa María, 30–IV–1964, on earth under *Austrocedrus chilensis*, at 900 m alt., Singer M 3704.—M 3709 (both BAFC).—Neuquén: on (woody) humus under *Nothofagus pumilio*, at 1100 m alt. Singer M 3382, 11–IV–1963 (BAFC).

CONOCYBE SIENNOPHYLLA (Berk. & Br.) Sing., Sydowia 9: 402. 1955; Mycologia 51: 395. 1959.

Agaricus siennophyllus Berk. & Br., Journ. Linn. Soc., Bot. 11: 545. 1871.
Conocybe ochracea (Kühner) Kühner & Romagnesi ex Sing., Mycologia 51: 395. 1959.

This corresponds to the description of the "forme microspore", Kühner, Encycl. Mycol. 7: 101. 1935. It occurs more frequently in the warmer zones (we have seen the type from Ceylon, material from India, Venezuela, and northwestern Argentina), but is occasionally found (or introduced) in temperate regions as in Europe, Southern South America, Altai.

CONOCYBE MAGNISPORA (Murr.) Sing., Sydowia 4: 135. 1950.

Since we have originally mixed up the type form and some closely related forms–which we now prefer to distinguish as species–we give a separate description of the typical *C. magnispora* as compared with the type.

Pileus brownish fuscous to brownish fulvous, mostly near "burnt umber" M & P, with darker transparent striae over half to four fifths of the margin and paler lines between striate, shorter and very slightly sulculate or smooth when faded, very finely pallid pubescent when quite young and quite fresh, soon glabrescent hygrophanous, fading to pale isabelline or fulvous-pallid, slightly subviscid when wet but soon dry, obtusely conic to convex, not further expanding, with smooth (not rugose or reticulated) center, 7–20 mm broad; veil none.—Lamellae light brownish soon becoming rusty from spores, subclose to subdistant (e.gr. 16 through-lamellae in smaller specimens), ascendant, adnexed to adnate.—Stipe white or whitish all through, finely pubescent (often visible only under a lens, and glabrescent), smooth, equal or slightly tapering upwards, not bulbous, 15–60 × 1.2–3 mm; veil none.—Context white in the entire stipe, inodorous.

Spores 13–17.5 × 8–10 µ, ellipsoid, smooth, with thick complex wall, well and intensely ferruginous in NH_4OH and KOH, with a broad

truncate germ pore.—Basidia 17–34 × 9–14 μ, all 4-spored, or some 2–3-spored ones intermixed. Cystidia none; cheilocystidia 19–27.5 × 6.5–7.8 μ, capitulum 3–4.5 μ diam. No needle-crystals in NH_4OH mounts.—Hyphae with clamp connections.—Epicutis of pileus hymeniform, consisting of obpiriform element.—Dermatocystidia on stipe not capitate, versiform, 14–50 × 5.5–8 μ, mostly ventricose, often mucronate or with constrictions, also with long hyaline hyphal hairs.

On dung and old road banks in shaded places, more rarely in open places.

Materiel studied: ARGENTINA: Neuquén: Rincón, 13–III–1963, Singer M 3041 (BAFC).—U.S.A.; Florida: Alachua Co., Hatchet Creek, 12–V–1943, Singer F 1920 (F).—Levy Co., March 8, 1942, Murrill 19841 (FLAS), typus.

Conocybe diemii Sing. spec. nov.—Pileo brunneo ("cocoa" M & P), margine dilute laete brunneo ("topaz" M & P), hygrophano, dehydratione ochraceo, fortiter rugoso-reticulato in centro, striis perbrevibus (per 1 mm a margine) ornato, haud viscido subtiliter pubescente in vegetis, demum glabrescente, campanulato, ± 22 mm lato et 15 mm alto.—Lamellis brunneis ("centennial br." M & P), confertis, ascendentibus, adnatis.—Stipite margini pilei concolori, longitudinaliter striato, pubescente, recto, subaequali (in parte centrali leniter crassiore), cum pseudorrhiza plus minusve 65 mm alto (47 mm epigaeis), 3 mm lato ad apicem et 4 mm in centro; pseudorrhiza albo in substrato immersa; velo nullo.—Contexto inodoro.—Sporis 17–20 × 10–12.2 μ, ellipsoideis, levibus, intense laete ferrugineis (NH_4OH et KOH), poro germinativo lato truncato munitis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 30–39 × 14.5–16.7 μ, hyalinis, tetrasporis. Cheilocystidiis 19–29 × 6.7–9 μ, capitulo 3–3.5 μ diam., hyalinis. Cystidiis nullis.—Epicute pilei hymeniformi, e cellulis subisodiametricis efformata; inter eas dermatocystidiis ventricosis (± 20 × 6.7 μ) et nonnullis capitatis (ut cheilocystidia) interspersis.—Dermatocystidiis stipitis gregatim accumulatis, pluribus non capitatis, e.gr. 20 × 6.7 μ, sed multis longe effilatis (usque ad 120 μ longis) excrescentia filiformi 2–2.5 μ crassa hyalina; paucis dermatocystidiis capitatis etiam visis, sed rara sunt.—Subcaespitose vel gregatim ad herbas accumulatas in statu fermentationis loco umbroso in hortis. Typus: ARGENTINA: Neuquén: Puerto Manzano, 19–III–1963, Singer M 3075 (BAFC).—Species insignis, cl. J. Diem dedicata qui primus eam observavit.

Conocybe kuhneriana Sing. spec. nov.—Pileo ochraceo-brunneo, vel brunneo ("kis kilim" + "Cigarette" M & P), hygrophano, mox pallescente

ad ochraceo-fuscum clarum ("partridge" + 12–J–7) vel ochraceum, glabro vel subglabro, haud viscoso, sed interdum nitente, per tres quartas partes radii pellucide striato in humidis, subovoideo vel campanulato vel obtuse conico, haud repando, 5–16 mm lato, 7–10 mm alto; velo nullo.—Lamellis ferrugineis, ascendentibus, sublatis vel latis, e.gr. 3.5 mm latis, subconfertis vel subdistantibus, adnexis, rarius adnatis.—Stipite pallido vel sordide albido, ad basin in ochraceum vel sordide brunneum vergente, interdum in parte media etiam sordide ochraceo, admodum subtiliter pubescente, aequali vel apicem versus leniter attenuato, 30–35 × 1–2 mm; velo nullo.—Contexto in stipite albido, in medulla (quae mox evanescit et stipitem cavum reddit) albo, sed in cortice partis inferioris brunnescente vel ochrascente, fragili, inodoro.—Sporis 9.5–15 × 6.5–8.7 μ, ellipsoideis, levibus, intense coloratis, poro germinativo truncato munitis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 24–29 × 11–13 μ, tetrasporis, interdum nonnullis bisporis immixtis. Cheilocystidiis 12.5–29 × 6–11.7 μ, capitulo 2.2–4.5–(5.3) μ, hyalinis vel interdum brunneolis (in vegetis). Crystallis ammoniaci ope haud formatis.—Hyphis fibuligeris.—Epicute pilei hymeniformi, elementis brevibus rotundatis.—Stipitis dermatocystidiis numquam vel vix umquam capitatis, versiformibus, vesiculosis vel ventricosis, interdum constrictis, saepe mucronatis, 7–25 × 6–7 μ. Pilis hyphalibus sparsis vel sat numerosis, saepe e dermatocystidiis ortis, 1.7 μ diam.—Ad terram in apricis, saepe inter herbas et Gramineas, verne, aestate et autumno. Typus (M 722) in LIL conservatur.—Species communis, *C. siennophyllae* affinis, cl. R. Kühner dedicata cuius *Conocybe siliginea* var. *ocracea*, "récoltes macrospores" nobis identica apparet.

Material studied: ARGENTINA: Buenos Aires: Punta Lara, 9–VI–1949, Singer S 119 (LIL).—Tucumán: near Arroyo Mista, 27–X–1949, Singer T 722 (LIL).—CHILE: Llanquihue: 10 km north of Colaco, 9–V–1967, Singer M 6822 (SGO).—Santiago: La Rinconada, Sept. 1966, W. Lazo RI-9 (SGO).

Pholiotina

Pholiotina verrucispora Sing. spec. nov.—Pileo cinnamomeo-brunneo, subtomentoso, debiliter hygrophano, haud viscoso, non vel vix striato, levi vel venis haud manifestis subruguloso, convexo, demum repando, subumbonato, ± 10 mm lato.—Lamellis pileo subpallidiore, sat latis, horizontalibus, subconfertis, sinuatis, adnexis.—Stipite pileo subconcolori, levi, glabro, subaequali, sicco, cavo, ± 20 × 2 mm; velo nullo.—Contexto inodoro.—Sporis 7.3–8–(8.8) × 4.7–5.3–(5.8) μ, ellipsoideis, interdum applanatione suprahilari praeditis, in ammoniaco melleis sed ornamen-

tatione intense brunneolo-ochracea vel ochracea exosporiali verrucuso munitis, in KOH intense ferrugineo-brunneis, area levi suprahilari haud delimitata, poro germinativo praesente, perisporio interdum manifesto.—Hymenio: Basidiis 24–30 × 5.8–7.3 μ, tetrasporis, hyalinis, aut contentu visibili destitutis aut contentu melleo repletis et opacis. Cheilocystidiis 16–38 × 5–6.5 μ, haud conspicuis, versiformibus, plerumque leniter ventricosis basin versus, et ad apicem subcapitatis, sed aliis apice vix dilatatis vel constrictis ed ad apicem magis latis quam prope basin, hyalinis. Cystidiis nullis.—Hyphis fibuligeris. Tramate hymenophorali sine mediostrato differentiato bene evoluto, sed oblitterato inter strata lateralia (ex hyphis latis efformata); hymenopodio ex hyphis tenuioribus subfilamentosis vel filamentosis efformato. Parte sterili hymenophori typi Pholiotinarum regulari.—Epicute pilei hymeniformi, ex elementis vesiculoso-ventricosis, pedicellatis, in parte inferiore pigmento ferrugineo-brunneo incrustatis, 43–44 × 20–21 μ; inter ea, dermatocystidiis fortiter projicientibus ventricosis apice attenuatis conice vel filamentose, 55–80 × 16.5–20.5 μ (quorum causa pileus subtomentosus apparet).—Ad humum et terram in silvis mixtis Nothofagi dombeyi et Austrocedri chilensis, solitario, autumno. Typus: ARGENTINA: Neuquén: Puerto Manzano, 18–IV–1965, Singer M 5048 (BAFC).—Sporis verrucosis a ceteris Pholiotinae speciebus recedit.

PHOLIOTINA COPROPHILA (Kühner) Sing., Sydowia 4: 141. 1950; Trud. Bot. Inst. Kom. II. 6: 434. 1950.

Compare data given by Singer l.c. and the description and illustration by Kühner in Encycl. Mycol. 7: 125, 1935, and by Singer, Sydowia 7: 210. 1953.

Material studied: ARGENTINA: Tierra del Fuego: Estancia Nueva Argentina, 12–II–1950, Singer M 216 (LIL).—M 225 (LIL).—13–II–1950, Singer M 251 (LIL).—Buenos Aires: Chascomús, 4–VI–1949, Singer S 76 (LIL).—5 km east of Tandil, 16–XI–1962, Singer S 369 (BAFC).—Near Napaleofeu, 16–XI–1962, Singer S 368 (BAFC).—Tucumán: N of Infiernillo, 2500 m alt., 2–III–1952, Singer T 1927 (LIL).—Tafí del Valle, 23–X–1949, leg. A. Martinez (LPS).—Also material from Europe and Asia.

Pholiotina australis Sing. spec. nov.—Pileo fulvo vel ochraceo-brunneo, saepe colore suo Amanitam fulvam in mentem revocante, marginem versus plerumque pallidiore, per medium radium pellucide striato, glabro, levi, convexo, margine magis declivi, dein applanato et subumbonato vel umbonato, 12–18 mm lato; velo nullo in maturis.—Lamellis dilute brunneis (in siccis colorem lamellarum Bolbitii vitellini in mentem revocan-

te vel fuscidulo-brunneolis), horizontalibus, moderatim vel sat latis, confertis, ad aciem pallidis, subventricosis, adnexis.—Stipite albo vel pallido, leniter sericeo-fibrilloso vel pruinoso-flocculoso veli albi causa, sub lente pruinosulo apicem versus, sicco, aequali vel apicem versus attenuato, 40–60 × 2–3 mm; velo haud annuliformi, albo, haud persistente.—Contexto inodoro.—Sporis (7)–7.5–10–(12) × (4.2)–4.5–5.5 μ, fusoideo-ellipsoideis, melleo-brunneolis in ammoniaco, sat dilute pigmentatis, in KOH sordide fulvis vel ochraceo-brunneis, bene coloratis, haud pseudoamyloideis, levibus vel minutissime et admodum subtiliter, plerumque haud manifeste marmorato-punctatulis ex ornamentatione tenuissima et inconstante exosporiali, poro germinativo apicali angusto truncato vel vix truncato munitis, sed poro in omnibus sporarum positionibus praesente et visibili.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 21–34 × 7.5–11.5 μ, tetrasporis, hyalinis, clavatis, sterigmatibus ± 5 μ longis. Cystidiis nullis; cheilocystidiis 23–45 × 5–7.3 μ, ampullaceis vel ampullaceo-subcapitatis vel ad apicem claviculatis aut clavatis et tunc basin versus attenuatis, plerumque ventricosis et constrictis sub apice, qui interdum ventricositate basali latior est.—Hyphis fibuligeris, inamyloideis. Tramate hymenophorali brunneolo, regulari atque, mediostrato paullum evoluto, stratis lateralibus subcontinuis, hyphis usque ad 18 μ latis, pigmento intracellulari et membranali ornatis. Hymenopodio elementis brevibus sed minoribus efformato axialiter disposito. Hyphis tramatis eis hypodermii tenuioribus, radiatim currentibus, brunneolis.—Epicute pilei hymeniformi ex elementis clavato-vesiculosis vel globoso-vesiculosis et pedicellatis 18.5–33 × 6.5–17 μ, hyalinis, subhyalinis, vel pigmento incrustante ferrugineo-brunneolis, obtusissimis efformato; inter ea dermatocystidiis nullis vel sparsis, 19–38 × 3–9 μ, versiformibus sed frequenter cheilocystidiis similibus; inter ea, etiam interdum hyphis ad superficiem perrumpentibus et ad superficiem stratum tenue et haud persistenter gelatinisatum formantibus aut veli hyphas gelatinisatas attingentibus. Strato gelatinoso suprahymeniali supraepicuticulari paullum conspicuo et fugacissimo microscopice viso.—Tegumento stipitis flocculoso-pruinato e dermatocystidiis plus minusve cylindraceis, interdum hic inde incrassatis vel constrictis, hyalinis, saepe septatis, 35–63 × 8–11 μ efformato. Veli vestigiis sub microscopio vix notabilibus.—Ad terram inter culmos Chusqueae nec non ad frustula lignea varia in silvis, nonnumquam ad fimum in locis umbrosis. Typus (M 3137) in BAFC conservatus est.

Material studied: ARGENTINA: Rio Negro: path from Laguna Frías to the Paso de las Nubes, 22–III–1963, on the ground among *Chusquea*, Singer M 3137 (BAFC), typus.—CHILE: Colchagua: Pumanque, leg. W. Lazo, no. PU-83, 13–VI–1967 (SGO).—PU-55 (SGO).

Fully identical specimens are found on the most different habitats. The unspecific habitat requirements seem to be characteristic for this species. *P. australis* replaces the very related northern form, *P. subnuda* (Kühner) Sing., in Southern South America. The differences are minor: The spores are slightly smaller and even less ornamented, and they show a more distinct germ pore. The pileus is slightly more viscid, and the hyphae of the trama of the pileus and particularly the elements of the epicutis are more pigmented. Our specimens have no particular odor at all. The habitats indicated for *P. subnuda* are precisely the ones we have never noted for *P. australis*.

The extremely fugacious veil, here as in *P. subnuda*, seems to gelatinize early and therefore leaves no vestiges, even under the microscope, as the walls apparently disintegrate. There is no persistent ixo-cutis or ixotrichodermium present in the specimens analyzed by us.

Pholiotina ruizlealii Sing. spec. nov.—Pileo ferrugineo-fulvo, convexo dein applanato, interdum umbonato, substriato et usque ad 11 mm lato in siccis, glabro nec fragmentis velaribus obviis.—Lamellis ferugineis, acie pallidis, moderatim confertis, sat latis, adnexis.—Stipite albo, basin versus ut minime in siccis brunneo, 20–30 × 1 mm; velo nullo obvio.—Contexto subtenui.—Sporis 10.3–12.5 × 5.3–6.3 μ, bene pigmentatis, levibus, poro germinativo lato truncato praeditis, ellipsoideis.—Hymenio e basidiis efformato, cheilocystidiis marginato. Basidiis 16–30.5 × 7.5–9.8 μ, omnibus tetrasporis aut (2)–4-sporis, clavatis, hyalinis. Cystidiis nullis; cheilocystidiis (24)–30–50 × (4)–6–11 μ, ventricosis et plerumque apice ampullacee angustatis, interdum subcapitatis, hyalinis, apice 1.8–3 μ diam., capitulo 2.5–4.8 μ diam.—Hyphis fibulatis.—Epicute pilei hymeniformi ex elementis vesiculosis, pedicellatis (pedicello raro absente, plerumque brunneo), hyalinis (ut minime maxima e parte), e.gr. 37 × 22.5 μ efformata, dermatocystidiis nullis.—Ad terram argillosam locis umbrosis. Typus (Ruiz Leal 4.614) in BAFC conservatus est et syntypus in Herbario Ruiz-Lealii in Mendoza.

Material studied: ARGENTINA: Mendoza: Las Heras: Sanchón de los Ciruelos, Leg. Ruiz Leal no. 4.614 (BAFC, herb. Ruiz Leal), typus.—Parque General San Martín, 25–V–1957, Ruiz Leal 18.819 (BAFC, herb. Ruiz Leal).

This species has been studied only in dried condition. It is, however, different from the other species known in this genus, from *P. appendiculata* (f. *macrospora*) by subcapitate cheilocystidia and larger carpophore size, from *P. septentrionalis* by the shape of the cheilocystidia and larger spores, etc. The southern limit of the area occupied by this new species has not been determined.

Pholiotina austrofilaris Sing. spec. nov.—Pileo brunneo ("Sudan br." M & P), hygrophano, dehydrato pallidiore, haud viscido, glabro, levi vel per nonnulla millimetra striato, haud rugoso, conico vel campanulato, dein margine applanato et apparenter vel de facto conico-umbonato, 6–19 mm lato, velo in pileo maturo nullo.—Lamellis melleis ("powdered gold" M & P), confertis vel subdistantibus (lamellis integris plures quam 20), latis, ventricosis, adnexis.—Stipite albo, aequali vel apicem pruinatum versus attenuato, ad basin rotundato vel acuminato, interdum subbulboso, in junioribus obclavato, 27–45 × 1–2 mm; velo annuliformi, albo, annulo apicali, demum mediano vel infero, crasse membranceo, dein integro vel fragmentario, sat persistente sed in siccis plus minusve mobili, haud furfuraceo, ad interius-superius latus striato.—Contexto vix odoro.—Sporis 7.5–9.5 × 5–5.7 μ, subamygdaliformibus vel fusoideo-ellipsoideis, levibus, ferrugineis, poro germinativo truncato, in aspecto laterali quoque visibili.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 20–25.7 × 7.5–8.7 μ, tetrasporis. Cystidiis nullis; cheilocystidiis 33–50 × 5–13.5 μ, forma et magnitudine variabilibus, saepe ventricosis vel ampullaceis, et si ampullacea sunt, ad apicem reincrassatis subcapitulatis vel aequalibus, capitulo, ubi praesens, 5–9.5 μ diam., sub capitulo in ampullaceis 4.5–5 μ diam., nonnullis cylindraceis, hyalinis vel pigmenti incrustatione vel pigmento membranali brunneolis, aliis ad apicem hyaline incrustatis, aliis nudis; acie lamellarum heteromorpha.—Hyphis fibulatis, in tramate pilei et hymenophori incrustatis pigmento ferrugineo vel ochraceo-brunneo. Tramate hymenophorali Pholiotinarum modo regulari.—Epicute pilei hymeniformi, ex elementis vesiculosis vel clavatis, 14–34 × 5.8–15 μ, e pigmenti inscrustatione brunneis efformata. Hypodermio cutem repraesentante, ex hyphis filamentosis, parallelis, fortiter pigmento brunneo-incrustatis efformato. —Ad terram in silvis, sub *Nothofagis dombeyi*.—Typus (M 3537) in BAFC conservatus est.

Material studied: ARGENTINA: Neuquén: Rincón, 13–III–1963, Singer M 3537 (BAFC), typus.—Puerto Manzano, 5–IV–1963, Singer M 3280 (BAFC), paratypus.

Pholiotina teneroides (Lange) Sing. comb. nov.

Pholiota teneroides Lange, Dansk Bot. Ark. 2: 7. 1921.

This is what Kühner (Encyclop. Mycol. 7: 162, 1935) considers the two-spored form of *Conocybe togularis* "Ricken". Even if this latter were the same as *Agaricus togularis* Fr. (which we doubt), it seems better to separate the two-spored form, at least for the time being. Some authors, on the contrary, think that this is a form of the *Agaricus* or *Pholiotina blattaria* in the sense of Fries, not Kühner.

A good description and illustration can be found in Kühner l.c. p. 162–165.

Material studied: ARGENTINA: Neuquén: Villa Angostura, 30–IV-1958, C. Pujals & I. Gamundí no. 344 (BAFC).—BOLIVIA: La Paz: Nor-Yungas, Carmen Pampa, 17–I–1956, Singer B 1243 (LIL).

Bolbitius

BOLBITIUS ALEURIATUS (Fr.) Sing., Lilloa 22: 490. 1951.

A description of this species see Sydowia 7: 213. 1953.

BOLBITIUS VITELLINUS (Pers. ex Fr.) Fr., Epicrisis p. 254, 1838.

A description of this common European and North American as well as South American and Asiatic species can be found in the current European literature and in A. H. Smith, Mushrooms in their natural Habitat, p. 465, reel 23, no. 157, 1949.

Descolea

DESCOLEA RECEDENS (Cooke & Mass.) Sing., Sydowia 9: 407. 1955.

Agaricus recedens Cooke & Mass., Grevillea 18: 25. 1890.
Pholiota recedens (Cooke & Mass.) Sacc. Syll. F. 9: 93. 1891.
Descolea antarctica Sing., Lilloa 23: 257. 1951.

Pileus ochraceous brown or brown, sometimes deep ochraceous brown, margin sometimes lighter ochraceous (e.gr. 12–J–9, margin e.gr. 10–E–5 M & P), viscid to slightly viscidulous, hygrophanous, fading partly or entirely to some shade of ochraceous, often with velar patches or floccons, especially near margin, but occasionally all over, these of an ochraceous brownish (e.gr. "Peruvian br." M & P) to whitish color, and eventually washed naked, otherwise glabrous, smooth or rugose, often with transparently striate margin (over a zone 2–33 mm from margin) and then mostly paler between striae, but not or only slightly sulculate when faded, campanulate-convex or convex, eventually applanate, with or without an obtuse and rather broad umbo, not umbilicate, 17–52 mm broad; veil either floccose or in the manner of the volval patches of *Amanita*, varying from white to pale tan to ochraceous brown.—Lamellae at first pale argillaceous gray ("Manila" M & P), later ochraceous (11–H–6, M & P), narrow to broad, ventricose or subventricose, close or subclose, adnexed, sometimes emarginate and very narrowly adnexed, but not free nor

broadly adnate. Spore print fresh golden ochraceous (not fuscous or ferruginous), "buff", "nugget" or "antique gold" M & P.—Stipe white, whitish, or ochraceous pallid, sometimes becoming stramineous at apex or brownish further down, dry, lower part occasionally found partially covered by similar patches or floccons as the pileus, annulate besides, often silky at apex, or even appressedly fibrillose, in age often partly longitudinally grooved, otherwise smooth and glabrous to slightly appressedly fibrillose, solid, eventually somewhat hollow, equal or with somewhat thickened basal portion but not bulbous, 25–68 × 3.5–15 mm; annulus apical or mediane, thin-membranous to thick membranous, sulcate on upper inner side, white, firm, but at times becoming fragmentary, rarely only subannulate on the stipe and instead appendiculate on the margin of the pileus, at times eventually disappearing. but usually rather persistent and conspicuous; basal mycelium white.—Context white, later often with brownish peripheric zone, otherwise unchanging, fleshy, inodorous, more rarely slightly fruity, not farinaceous or raphanaceous.

Spores 7.5–13.5–(14) × (3)–4.8–7.7–(9) μ, those that are formed by bisporous basidia up to 18.5 μ long in some collections, but variable from collection to collection, e.gr. 7.5–11.8 × 4.8–6.5 μ or 9.5–11 × 6–7 μ in some collections, and 12.2–13 × 7–7.3 μ in others (e.gr. in the type), but the intermediate measurements such as 9.5–12.5 × 5.5–7.7 μ also occurring, also some relatively narrow-spored forms (9.5–13.2 × 5.7–6.5μ) occurring, without relation to the geographical position, but perhaps the spores from 2–4-spored specimens narrower, characteristically fusoid and attenuate at both ends, even with subacutely mucronate tip which may be snout-like, with or without suprahilar depression, with thick complex wall, with mostly elongated oil drop, with low punctation or sometimes reticulation from an exosporial ornamentation, without a plage, often less ornamented in spores derived from bisporous basidia, rusty on brownish melleous episporium (KOH), with hyaline or subhyaline endosporium, with an apical or subapical callus or nun-truncate germ pore.—Hymenium: Basidia 24.5–45 × 7.2–11.5 μ, either all 4-spored, or mixed with (1)–2–(3)-spored ones, but never seen with exclusively 2-spored basidia, sterigmata of normal to occasionally rather strongly elongated shape. Cystidia none. Cheilocystidia few to crowded, 16–42 × 5–10.3 μ, versiform, vesiculose-clavate to cylindric, or narrowly clavate and often with a slight constriction, obtuse, hyaline, some often rusty brownish, some with the aspect of pseudoparaphyses (they may actually be pseudoparaphyses!) and all tending to become subhymeniform or even intertwined and subirregular in age.—Hyphae with clamp connections (as are the bases of the basidia), hyaline in the trama and the hymenophoral trama, but in both sometimes incrusted by ochraceous brown or rusty pigment. Hymenophoral trama

regular, in the central part formed by broad hyphae (8.5–21 μ diam.), narrower towards the hymenopodium, which is also often brownish. Velar layer of the pileus formed by repent filamentous hyphae 1.7–4.8 μ thick, more or less incrusted rusty or ochraceous pigment.—Epicutis of pileus a hymeniform layer of vesiculose-clavate elements which are hyaline or brown, 11–27 × 4–11 μ, overlaid by the velar hyphae (see under hyphae above), becoming somewhat compressed and disorganized in specimens with strong velar development on the surface of the pileus. Hypodermium cutis-like, consisting of more or less hyphous elements, these strongly brown, pigment-incrusted, more or less interwoven but generally subhorizontal, some filamentous terminal members at times piercing through the epicutis and gelatinizing above it. No dermatocystidia seen anywhere.

Chemical characters: NH_4OH on pileus negative, on lamellae avellaneous,—Metol: Negative.—KOH on pileus somewhat deeper brown, almost negative; on lamellae rapidly avellaneous then deep cinnamon.—HCI on pileus slightly bleaching, on lamellae negative.—$FeSO_4$ a sordid dusky olive in all parts.

Generally on the ground, but occasionally on small pieces of wood rotting on the ground, often among leaves or mosses, in both ectotroph forests and anectotrophic forest, summer, spring, and fall, in Central Chile also in winter.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 18–IV–1965, Singer M 5046 (BAFC).—Isla Victoria, 17–V–1952, Singer M 696 (LIL).—Quetrihué, 19–V–1952, Singer M 761 (LIL).—Near Puerto Manzano at 900 m alt., 9–IV–1963, Singer M 3342 (BAFC).—San Martín de los Andes, 7–IV–1951, leg. Cei & Tomsic, comm. Singer M 472 (LIL).—Lago Lácar, Pucará, 6–XI–1966, Singer M 6029 (BAFC).—Tierra del Fuego: Estancia Nueva Argentina, 18–II–1950, Singer M 144 a (LIL), typus of *Descolea antarctica*.—M 144 (LIL).—M 218, M 219, M 306 a (all LIL, paratypes).—CHILE: Llanquihue: El Frutillar, 15–IX–1967, Singer M 7542 (SGO).—Maule: Between Chovellén and Trehualemu, 3–VIII–1967, Singer M 7218 (SGO).—Santiago: Cerro Robles, 21–IX–1967, Singer M 7779 (SGO).—AUSTRALIA: Victoria: Mordiallac, 1889, leg. O. French (K), typus.

It was at first assumed that a smaller spored form can be separated as an autonomous species, and that the Australian form represents still another form. It may well be that within this species as described above, eventually varieties can be distinguished, but the combined data provide for all the intermediates so that, at present, I shall make no attempt to describe infraspecific taxa. It was also assumed that *Descolea* is a mycorrhizal fungus in South America. However, one collection was now discovered on dead wood, and several were found in definitely anecto-

trophic forests. Therefore, if at all, the species may be facultatively mycorrhizal on ectrotroph trees (*Nothofagus*).

Repeated anatomical analyses of specimens collected in our region showed that the apical discontinuity of the spores may well be interpreted as a narrow pore inserted in a protruding apex, and the epicutis is normally of the type generally encountered in the Bolbitiaceae. We therefore prefer to insert *Descolea*, with its now only species, in this latter family, close to *Pholiotina* where we have recently discovered the existence of strongly ornamented spores (e.gr. *P. verrucispora*, see above).

Agrocybe

AGROCYBE AEGERITA (Brig.) Sing., Schweiz. Zeitschr. Pilzk. 17: 21 (reprint pag.) 97. 1939.

For a description of this species see Singer & Digilio, Lilloa 25: 327. 1952. Synonyms are *Pholiota impudica*, *P. formosa* Speg., *P. crassivela* (Speg.) Sacc., *A. cylindracea* (D. C. ex Fr.) Maire, *Pholiota phylicigena* (Berk.) Sacc. according to the type studies of this author.–Illustrations see Singer, Mushrooms and Truffles, London 1961, pl. 25.

We do not know whether this species is as homogenous as the external aspect and habitat suggest. There are indeed forms with less visible, never truncate germ pore, and others where the germ pore of the spores is rather variable and although mostly non-truncate, often appears definitely truncate. There is also a form with acute pleurocystidia, and another with obtuse ventricose-ampullaceous ones. Some specimens show exclusively 2-spored basidia others are four-spored. Some collections are remarkable for the rugose pileus, [1]) others have the pileus quite smooth; some are basically white, others strongly pigmented. Additional studies are necessary to evaluate these differences and possible correlations.

South American material studied: ARGENTINA: Neuquén: Quetrihué, 6–III–1959, Singer M 1659 (SGO), acute cystidia, 4-spored, pileus slightly scrobiculate, on *Maytenus*.—Authentic and type material of the above-named Spegazzinian species, *P. impudica* on *Quercus*.—Buenos Aires: La Plata, leg. & det. Lindquist & Wright (as *P. formosa*), 26–IV–1951 (LPS); cystidia acute.—Chascomus; 5–I–1966, leg. L. Bonaiges; cystidia obtuse, on *Acer negundo*.—Tucumán; San Nicolás, 20–IV–1949, leg. Loria; cystidia acute, basidia bisporous, spores to 15.5 μ, on *Brousso-*

[1]) This form has been described by Singer as var. *rugosovenosa* Sing., Rev. Mycol. 18: 19. 1953.

netia papyrifera (LIL).—Quebrada de Lules, 26–II–1952, Singer T 1875 (LIL), on *Allophylus edulis*, rugose.—Salta: Cafayate, leg. Hayward, on *Salix* (LIL).—CHILE: Valdivia: Cuesta Sta. Elvira, 14–V–1967, Singer M 6895, with rugose pileus (SGO).—TRISTAN DA CUNHA: Typus of *A. phylicigenus*, on *Phylica arborea* (K), typus.—Leg. Christophersen & Mejland no. 1742, 1666, also on *Phylica* (LIL).—BRAZIL: Rio Grande do Sul: Parecí, 2–XI–1951, Singer B 55 (LIL), on *Copania vernalis* and *Allophylus edulis*.—Also numerous other specimens in the herbarium SGO (as *Pholiota crassivela*), mostly on *Populus* and *Salix* from Central Chile, where we have seen it sold in the markets. Also material from Afghanistan (Kabul), on *Populus pyramidalis*, 1780 m alt. 21–V–1950, leg. Gilli (W) and several collections from Italy (leg. Bresadola as *P. pudica*, etc.), mostly on *Populus*.

This species is edible and frequently collected as such in Argentina and Chile.

Agrocybe lazoi Sing. spec. nov.— Pileo ochraceo-luteo, marginem versus pallidiore, levi, sub lente leniter tomentosulo, non rimoso, non squamoso, non viscoso, 16–30 mm lato, convexo.—Lamellis brunneolis, confertis, mediocriter latis, albo-marginatis, adnatis.—Stipite albo, dein pileo concolori, annulato, aequali vel basin versus attenuato, 20–40 × 3–5 mm; annulo albo, simplici, fugaci; mycelio basali albo.—Contexto carnoso.—Sporis 7–8.5 × 4.–5.5 μ, levibus, ellipsoideis, endosporio et exosporio junctis 0.5 μ crassis, membrana firma haud collabente colore sporarum Inocybarum gaudentibus, interdum reniformibus, interdum subtruncatis, sed poro germinativo omnino destitutis.—Hymenio e basidiis et cystidiis raris et inconspicuis efformato et cheilocystidiis marginato. Basidiis 14–35 × 6.5–7 μ, tetrasporis. Cystidiis 32–36 × 3–5 μ, filiformibus, vel cylindraceis, acutis vel obtusis, hyalinis, membrana tenui vel leniter subincrassata instructis, nudis, haud projicentibus. Cheilocystidiis 37–40 × 6–9 μ, clavatis, cylindraceis, subventricoso-subampullaceis, interdum sub apice subcapitato constrictis, late rotundatis ad apicem, hyalinis, tenui-tunicatis.—Hyphis tramatis hymenophoralis regulariter dispositis, in parte centrali hyalinis, in parte laterali brunneis et angustioribus, subhymenio brunneo (ita ut interdum parte inferiore basidiorum) pigmenti incrustantis causa; fibulis praesentibus.—Epicute pilei subhymeniformi, dein irregulariter intermixta.—Ad lignum putridum terra tectum. Typus: CHILE: Valparaiso: Viña del Mar, 28–VII–1966, W. Lazo, VI–17 (SGO).

This species is characteristic because of the narrow and rare pleurocystidia, and probably belongs in the neighborhood of *A. aegerita* and *A. erebia*. Its southern limits have not been established since it appears to be rare.

AGROCYBE PRAECOX (Pers. ex Fr.) Fayod, Ann. Sc. Nat. VII. 9: 358. 1889.

This common species of almost world-wide distribution is described and illustrated in the current European literature; a paler colored, generally rather large variety whose pileus eventually becomes diffract is var. *cutefracta* (Lange) Sing. described by Singer & Digilio, Lilloa 25: 325, 1952.

Material studied: ARGENTINA: Tierra del Fuego: Estancia Nueva Agentina, 13–III–1950, Singer M 257 (LIL).—21–II–1950, M 415 (LIL). —Rio Negro: Laguna Frías, 18–XI–1965, Singer M 4019 (BAFC).— CHILE: Valparaiso: Viña del Mar, VIII–1966, W. Lazo VI–33 (SGO).— Valdivia: Valdivia, Lazo VA-7 (SGO).—COLOMBIA: Cundinamarca: Montserrat, July 1960, Singer B 3459 (LIL).—TRISTAN DA CUNHA, 2–III–1938, leg. Mejland 1658 (K).—GERMANY: Bavaria: Hohenschäftlarn, June 1953, Singer (LIL).

AGROCYBE PLATENSIS (Speg.) Sing., Lilloa 25: 496, 322. 1952.

Description see Singer & Digilio, Lilloa 25: 322. 1952.

We have additional material from the province of Mendoza, Argentina, and from the province of Santiago, Chile (Herb. Ruiz Leal no. 7.863, 14.016 n, 21.774 and SGO, respectively). The southern limits of this species have not been established.

Agrocybe viscosa Sing. spec. nov.—Pileo flavo vel melleo-flavido vel centro fulvo subaurantiaco margineque luteo, fragmentis veli Amanitae gemmatae modo albis vel albidis obsito, demum nudo, glabro, viscoso, levi, forma Agrocybem praecocem et eandem speciem magnitude approximante.—Lamellis dilute brunneolo-ochraceis, in siccis argillaceo-fuscis (sporis accumulatis subferrugineis), moderatim latis vel latiusculis, adnatis vel adnexis, confertis.—Stipite albo, a basi apicem versus ochrascente, demum dilute ochraceo-brunneolo, levi vel longitudinaliter sulcatulo, vel apicem versus sulcato, aequali sed ad basin subbulboso vel bulboso, dimensionibus Agrocybem praecocem approximante; velo membranaceo, albo, annuliformi, subtenui, subsulculato ad latus superius, apicali, amplo, demum fugaci.—Carne alba, miti, subinodora.—Sporis 13.5–17 × 9–12 μ plerumque 14 × 10 μ cc., late ellipsoideis, in aqua et ammoniaco ochraceis, magis ferrugineo-brunneolis in KOH, membrana complexa, levi inamyloidea instructis, poro germinativo apicali truncato praeditis, haud vel vix lentiformibus.— Hymenio e basidiis et pleurocystidiis efformato et cheilocystidiis marginato; basidiis 26–34 × 8–10 μ bisporis, paucis trisporis vel perpaucis tetrasporis; cheilocystidiis pleurocystidiis similibus vel eis Agrocybis paediadis simillimis, fusiformibus vel ampullaceis, apice extremo 4–

7 μ diam., ibi aequalibus vel subcapitatis, subacutis vel plerumque rotundatis, tenui-tunicatis, hyalinis, 28–37 × 7–13 μ, pheurocystidiis 33–35 × ± 14 μ, ampullaceis, hyalinis, nonnullis incrustatione tenui resinacea pallide brunneola apicali tectis, ad apicem rotundatis, perpaucis subcapitatis, membrana tenui instructis.—Hyphis tramatis hymenophoralis regularis haud gelatinosis, haud pigmentatis, usque ad 15 μ latis aliisque filamentosis et subintertextis.—Epicute pilei strato hymeniformi vel subhymeniformi (subintermittente) formata, elementis subvesiculosis vel clavatis et pedicellatis levibus 20–30 × 4–8 μ constitutis; his elementis hyalinis vel rarius brunneolis e pigmento membranali; hyphis nonnullis filamentosis hymenium percurrentibus et stratum glutinosum supraepicuticulare efformantibus, hic hyphis ± 2 μ crassis et laxis, in contextum velare transeuntibus, ubi fragmenta veli adsunt. Stratum gelatinosum in stipite abest.—Ad substrata varia in calidariis; typus a W. Lazo lectus (SGO), in Estación Experimental Agronómica de la Universidad de Chile, Maipú, provinciae Santiago, 8–IX–1966 no. RI-8; paratypus: Lazo RI-7, ibidem.

Agrocybe procera Sing. spec. nov.—Pileo brunneolo-cremeo vel flavido-alutaceo, magis dilute colorato in zona marginali, haud striato vel sulcato margine extremo excepto ubi interdum plicato-sulcato apparet, haud viscoso, glabro, nudo, convexo, 45–150 mm lato.—Lamellis ochraceo-brunneis, siccis tabacinis (haud ferrugineis), latis, acie albis, confertis, adnatis vel leniter rotundato-adnatis.—Stipite albido, vel sordide ochraceo-brunneolo, ex integro pustulato-punctato vel flocculoso-fibroso, evelato, aequali sed ad basin bulboso vel bulbilloso, solido vel farcto, 46–160 × 4–19 mm; mycelio basali abundante, albo, etiam rhizomorphis albis praesentibus.— Contexto albo vel albido, carnoso, firmo, immutabili; odore nullo vel subnullo; sapore miti, interdum dulcidulo.—Sporis 9.5–14.2 × 6–8 μ, ellipsoideis, levibus, ochraceis vel ochraceo-brunneis (bene pigmentatis in ammoniaco et KOH), poro germinativo apicali lato truncato.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis 23–36 × 7–12.3 μ, tetrasporis omnibus vel perpaucis bisporis intermixtis. Cystidiis 36–48 × 10–25 μ, ventricosis vel ventricoso-mucronatis et subampullaceis, interdum subvesiculosis et plerumque mucronatis, obtusis, interdum sub apice constrictis, sed plerumque haud constrictis, hyalinis vel incrustatione tenui resinacea brunneola vel ochracea tectis, levibus, raro semel vel bis apicaliter nodosis, raro contentu brunneolo repletis, tenui-tunicatis, moderatim vel sat numerosis. Cheilocystidiis ventricosis, ampullaceis, obtusis, sub apice subcapitata plerumque plus minusve constrictis, apice iterum incrassatis et obtusis, hyalinis, numerosissimis, 19–46 × 7.5–12.3 μ; acie heteromorpha.—

Hyphis fibulatis; tramate hymenophorali regulari.—Epicute pilei cellulari, ex elementis subisodiametricis vel isodiametricis formata et dermatocystidiis interspersis; elementis his tenui-vel crasse tunicatis et hyalinis, 13–25 × 10–21 μ, dermatocystidiis aut cheilocystidiis simillimis e.gr. 33 × 16 μ, capitulo 5 μ diam., aut ventricosis apice leniter constrictis vel haud constrictis, vel subampullaceis obtusis, raro subacutis, hyalinis vel contentu brunneolo repletis, 30–60 × 10.5–17 μ. Hypodermio ex elementis variabilibus, plerumque filamentosis, plus minusve intertextis, pigmenti incrustantis causa ochraceis vel brunneo-ochraceis efformato.—Ad sarmenta et fimum locis apricis et umbrosis in campis, silvis, viridariis etc., gregatim. Typus: CHILE: Valparaiso: Viña del Mar, Martio 1966, leg. A. Lazo VI-1 (SGO).—Etiam in Argentina: Tucumán: Anta Muerta, cc. 1100 m alt., 16–IV–1950, Singer T 966 (LIL).—Species grandis, stipite plus minusve bulboso, pileo levi, dermatocystidiis pilei insignis.

Agrocybe allocystis Sing. spec. nov.—Pileo gilvo-brunneolo vel ochraceo-flavo (centro magis brunneo, margine magis flavido), "burnt umber" vel 11–L–9 Maerz & Paul, aut "sorrel" vel 9–H–5 M & P, aut "doubloon" vel 11–H–8 M & P, levi, glabro, hygrophano, dehydratatione pallidiore, initio subviscido vel viscido, dein sicco, opimo-nitido vel subnitidiusculo, nonnumquam partim rivuloso, in exsiccatis colore *Russulae mustelinae* "raw sienna" M & P plerumque gaudente, convexo, dein centro depresso vel applanato vel subumbonato, frequenter obtuse umbonato, rarius conico-applanato, 8–35 mm lato; velo albido, freqenter sparse appendiculato.—Lamellis melleo-griseis vel grisello-argillaceis, dein fuscis vel brunneis (e.gr. "tiffin" M & P), ad aciem albidis, latis vel latissimis, confertis vel subdistantibus, rotundato-adnexis vel sinuato-adnexis vel adnatis, frequenter ventricosis.—Stipite ochraceo vel pallide ochraceo vel ochraceo-pallido vel clare alutaceo initio saepe subalbido, e.gr. 13–K–9 M & P ad apicem, subglabro vel fibrilloso, ad apicem nudo, farcto, demum cavo, aequali vel basim versus incrassato, 17–65 × 1.5–8 mm; velo sericeo vel fibrilloso vel flocculoso, interdum abundante, interdum sparso, annulum completum haud efformante, albido; mycelio basali albo, rhizomorphis albis frequenter abundantibus.—Carne albida vel in pileo alutaceo-albida vel ochraceo-alba, in medulla stipitis frequenter brunnescente; odore saporeque farinaceis, haud amaris.—Sporis 11–15.5(17.5) × 7.3–9.5(11) μ, castaneo-brunneis in KOH, melleo-ochraceis in aqua in statu humido, complexe tunicatis (exosporio tenuissimo subhyalino), poro germinativo amplo truncato praeditis, levibus, ellipsoideis, numquam rhomboideis vel lentiformibus, in massa atrocastaneobrunneis ("cochin" M & P).—Hymenio e basidiis et cystidiis plerumque metuloideis consistente et cheilocystidiis marginato; basidiis 20–33 × 7.5–11.8 μ, saepe

centro constrictis (2)–(3)–4-sporis; cheilocystidiis et pleurocystidiis aequalibus vel subaequalibus (his frequenter magis crassitunicatis et latioribus, nonnumquam pigmento melleo-ochraceo membranali vel incrustante gaudentibus), 22–95 × 5.5–20 μ, ampullaceis, rarius ventricosis, apice obtusis et frequentissime subcapitatis (capitulo (2)–4–9 μ diametro) interdum apice aequali vel constricto, interdum apice subnodulosis, membrana firma vel partim incrassata instructis (0.2–1.8 μ diametro) sed ad apicem plerumque tenui-tunicatis, sparsis vel numerosis ad latera, densis ad aciem lamellarum; frequenter pseudoparaphysibus praesentibus quae 13–17 × 7.7–11.5 μ metiunt et subvesiculosae sunt (interdum cum corpusculo amorpho subhyalino interno, quod chrysocystidium simulat).—Hyphis hyalinis vel subhyalinis, fibulatis (sed interdum nonnullis septis defibulatis secundariis praesentibus) haud gelatinosis, in tramate hymenophorali plus minusve intertextis sed regulariter dispositis.—Epicute pilei sat versiformi, in sectionibus bonis carpophororum vigorosorum subhymeniformi, sed eius elementis frequenter laxe dispositis vel intermittentibus, clavatis, 6–45 × 3–14 μ, dein intertextis et hyphis percurrentibus interruptis; strato velari frequenter superimposito, interdum subgelatinoso, hyphis filamentosis et frequenter pigmento tenuiter incrustatis, sed fugacibus, rarius persistentibus, irregulariter dispositis; hypodermio ex elementis laxe dispositis sed haud gelatinosis, filiformibus vel latiusculis, pigmentatis sed haud vel vix conspicue incrustatis, ochracei pigmenti membranalis causa, plus minusve intertextis efformato.—Ad fimum et ad terram in pascuis et ad marginem viae, solitario vel gregatim, in Uruguay, Argentina, Chile communis.—Typus (BAFC) a Singer prope Club Hotel, Sierra de la Ventana, provinciae Bonaerensis, Argentina, 15–XI–1962 lectus est no. S 348.—Paratypi: S 617, Río Samboronbón, prov. Buenos Aires, leg. Singer; T 857, prope Tafí del Valle, prov. Tucumán, leg. Singer; 31–XII–1966, Pampa de Achala, prov. Cordoba, Argentina, leg. Singer; 4–XII–1966, prope Rocha, Uruguay, leg. Singer; B 4309, prope Las Cholgas prope Chuy, Uruguay, leg. Singer; Va-10, Valdivia, Chile, leg. W. Lazo; Pu-5, Pu-13, Pumanque prov. de Colchagua, leg. W. Lazo; M 6942, prope Quintero, prov. Valparaíso, Chile, leg. Singer; M 6928 a, San Carlos, Cord. de Nahuelbuta, prov. Malleco, Chile, leg. Singer; M 7233, Trehualemu, Maule, Chile, leg. Singer.

AGROCYBE SEMIORBICULARIS (Bull. ex Fr.) Fayod, Ann. Sc. Nat. VII. 9: 358. 1889.

We understand this species in the sense of Sydow, Mycotheca Germanica no. 1412: This is the same as *A. pediades* f. *bispora* Sing., Trud. Bot. Inst. Kom. Ak. N. SSSR II. 6: 457. 1950.

Pileus pale tan, pale ocher, whitish ocher, ochraceous, glabrous and

naked, slightly viscidulous when humid, smooth, pulvinate then convex, then flattened, mostly about 14–21 mm broad.—Lamellae brown, at first brownish gray, broad, subclose, adnate.—Stipe finely whitish ocher, pale ocher or tan-pallid fibrillose or fibrillose-pruinate, solid, eventually stuffed, equal or subequal, mostly about 28–35 × 1.5–2.5 mm; pseudorrhiza absent; white rhizomorphs generally numerous to scarce, rarely inconspicuous or absent; basal mycelium white.—Context white, fleshy in pileus, odor none or slightly farinaceous; taste farinaceous, not bitter.

Spores 11–16.5–(17) × 7.5–12 μ, Q(length/breadth) = 1.3–1.4(1.7), ellipsoid, melleous-ochraceous brownish, smooth, with broad truncate apical germ pore, with thick complex wall.—Basidia constantly 2-spored, 25–28.5 × 8–9.5 μ. Cystidia none; cheilocystidia making edge heteromorphous, 23–49 × 5–10 μ, ventricose and thinned above but with subcapitate apex, thinnest region 1.7–2.7 μ across, capitulum 3.2–5.2 μ broad.—Hyphae hyaline, with clamp connections.—Epicutis hymeniform, with clavate hyaline elements, these 17–23 × 4.5–9 μ. Hypodermium ochraceous from a membranal pigment which is also sometimes somewhat incrusting, some walls slightly thickened.

On earth and sand, spring, summer, and fall.

Material studied: ARGENTINA: Neuquén: Lago Lácar, Pucará, 6–XI-1966, Singer M 6013 (BAFC).—Puerto Manzano, 19–III–1963, Singer M 3073 (BAFC).—Many European collections incl. Sydow, Myc. Germ. no. 1412 (LE).—AFGHANISTAN: Tangi Garu, between Kabul and Surobi, soil pH = 7.2, 12–V–1950, Gilli no. LXXXVI (W).

AGROCYBE ARENICOLA (Berk.) Sing., Beih. Botan. Centralbl. 56, B: 167. 1936; Trud. Bot. Inst. Kom. Acad. N. SSSR II 6: 459. 1950.

For a complete description see Singer, l.c. and Mycopath. et Myc. Appl. 34: 136. 1958.

Agrocybe arenaria (Peck) Sing., comb. nov.

Naucoria arenaria Peck, Bull. N.Y.St. Mus. 157: 29. 1912.

Pileus light brownish yellow, pale ochraceous yellow, Indian or wax yellow, very slightly subviscid when humid, glabrous and smooth, eventually more brownish, hygrophanous and becoming more yellowish with paler margin when faded, campanulate-semiglobate or strongly convex, eventually applanate or convex-plane with the central portion often sometimes obtusely elevate-subumbonate, 7.5–25 mm broad.—Lamellae pale brown, later ferruginous brown, often with whitish edges, moderately broad to very broad (2–4 mm), edge entire or slightly fimbriate-crenulate, subclose to subdistant to distant, emarginate-adnate or sinuate and broadly adnexed.—Stipe concolorous with the pileus or slighty paler,

often paler at apex, pruinate-fibrillose, glabrescent, especially below, stuffed then hollow, flexuous or straight, usually tapering from a broadened base which may even be strongly swollen, and sometimes again attenuated towards the ground where it is attached to white rhizomorphs, but also subequal all over, strongly inserted in the earth or sand and conglobating the substratum with the white basal mycelium, 20–40–(80) × 1.2–4 mm, below often thickened to 6 mm; veil none.—Context fulvous-pallid in parts; odor and taste farinaceous.

Spores (10.5)–12.7–18.5–(20) × (7.5)–7.8–10.6–(12) μ, ellipsoid, smooto, with thick complex wall, more rarely ovate, with broad apical truncate germ pore.—Basidia 28–37 × 9–12.5 μ, 4-spored or more frequently 2–4-spored, Cystidia nonĕ; cheilocystidia 22.5–47 × 6.5–16.5 μ, ampullaceous with apical (often subcapitate) thickening, rarely some without the thickening, hyaline, making the edge heteromorphous.—Hyphae with clamp connections.—Epicutis hymeniform or subhymeniform.

On naked earth, especially sandy soil, along paths, in fields, gardens.

Material studied: TRISTAN DA CUNHA: 8–III–1938, Mejland 1699 (K).—U.S.A.: New York: Karner, (NYS), typus.—Also material from Europe (Karelia, etc.).

This as well as the two preceding species belong in the *A. pediades* group; the present species has been described and interpreted as *Agaricus arvalis* in the sense of Fries by Singer l.c. and by Heim & Romagnesi (Bull. Soc. Mycol. Fr. 50: 171), but erroneously so. Peck's species is characterized by a tendency to develop a root-like base (like *A. arenicola*), but differs from related species by the large spores, 2–4-spored or 4-spored basidia, and a more yellowish pigmentation. It is the *Naucoria vervacti* in the sense of Ricken and *A. pediades* in the sense of Singer, R.N.S.E. Tristan da Cunya 36: 17. 1955, (pro parte).

AGROCYBE FIMICOLA (Speg.) Sing., Lilloa 23: 209. 1951.

Agrocybe coprophila Sing., Not. Syst. Sect. Crypt. Inst. Bot. Acad. Sc. URSS 5: 99. 1941.

Description see Singer, l.c.

AGROCYBE PEDIADES (Pers. ex Fr.) Fayod, Ann. Sc. Nat. 9: 358. 1889 ex aut. e.gr. Singer, Trud. Bot. Inst. Kom. Akad. N. SSSR II 6: 456. 1950.

This form (whose description see Singer, l.c.) is recognized by us as the typical *A. pediades*, the central species of the Pediades-stirps. It is distinguishable by the relatively smaller spores (9)–11.5–15–(17) × 7–10.5 μ, the absence of a veil, the fulvous ochraceous to fulvous-ochraceous-

pallid pileus, pallid stipe which is but slightly silky to subtomentose-fibrillose and glabrescent. The larger spored form represented by Patouillard-Doassans Herb. no. 1 is probably the same as *A. arenaria*.

South American material: ARGENTINA: Cordoba: Capinas, 31–XII–1966, Singer B 4315 (BAFC).—Also numerous collections from Europe and North America.

STROPHARIACEAE

Stropharia

Stropharia aeruginosa (Curt. ex Fr.) Quél. var. **neuquenensis** Moser & Sing. var. nov.—Pileo viridi, caerulescente-viridi, (30–G–8, "bronze green", in centro "shirvan" M & P), glabro, interdum innate subfibrilloso, viscido, convexo, demum applanato, 15–27 mm lato; velo squamoso ad ipsum marginem vel margine fimbriato-floccoso, haud persistente in pileo. —Lamellis fusco-griseo, dein fusco ("chukker br."), sicco obscurioribus ("Santos" vel "cattail" M & P), acie albis, interdum ad latera leniter viridi-tinctis, confertis vel moderatim confertis, sat latis (2–3 mm latis), sinuato-adnatis vel sinuato-adnexis.—Stipite glauco-viridello et saepe albido-marmorato, dein vel demum muscocolori-viridi et olivaceo-brunneo marmorato, ad basin in juvenilibus interdum atro-viridi, interdum torquescente, farcto, aequali, 39–60 × 3–5 mm; velo annuliformi haud abservato, sed floccolis vel fibrillis albis ex toto vel in parte inferiore veligenis ornato.—Contexto glauco-viridi vel viridello-pallido, in stipitis interiore farcto plerumque albo; odore nullo; sapore miti.—Sporis 7.2–9 × 4.5–5.3 μ, ellipsoideis, levibus, ochraceo-melleis in aqua et in KOH, poro germinativo satis angusto truncato munitis.—Hymenio e basidiis et chrysocystidiis efformato et cheilocystidiis marginato. Basidiis 26–29 × 5.2–8.8 μ, tetrasporis; sterigmatibus 3–3.5 μ longis, Chrysocystidiis numerosis, 31–43 × 8.5–12 μ, clavatis vel ventricosis vel subcylindraceis, apiculo mucroniformi brevi subacuto vel obtuso angusto apicaliter ornatis vel apiculo destitutis (rarius), corpusculo flavo amorpho (KOH) interno instructis. Cheilocystidiis 35–68 × 5–9 μ, interdum flexuosis et plerumque semel vel pluries constrictis, aut/et appendiculis mucroniformibus vel globosis subcapitatis uno vel duobus ornatis, basice clavatis, optice vacuis, hyialinis.—Hyphis fibulatis.—Epicute pilei gelatinosa (ixo-cutis!) ex hyphis 3–5.2 μ latis filamentosis sed partim pigmento incrustatis efformata. Hypodermio cutem repraesentante, haud subcellulari, haud gelatinoso, pigmento incrustante (in aqua viridi, in KOH melleo),

abundante, elementis 7–8 μ latis.—Ad terram in silvis humidis prope rivulis, sub Nothofagis, solitario vel subgregario, autumno. Typus: ARGENTINA: Neuquén: Rincón, 13-III-1963, Singer & Moser, Singer M 3520 (BAFC).—Puerto Manzano, 24-IV-1963, Moser 63/406 (Herbarium Moser, Imst), paratypus.

STROPHARIA SEMIGLOBATA (Batsch ex Fr.) Quél., Champ. Jura Vosg. 1: 112. 1872.

Widely distributed species, with 4-spored basidia, as understood by us. Description and illustrations in the current European and North American literature, for example in Smith, Mushrooms in their natural habitat 1: 530. 1949.

STROPHARIA UMBONATESCENS (Peck) Sacc. Syll. F. 5: 1021. 1887.

We accept this species in the sense of Kühner & Romagnesi, Flore anal. Champ. Sup. p. 336. 1953. It is also the *S. luteonitens* in the sense of some authors, but this species, in the sense of Fries, does not belong here, according to the opinion of Kühner & Romagnesi.

Stropharia flocculosipes Sing. spec. nov.—Pileo cinnamomeo-aureo-brunneo ("harvest" M & P), margine pallidiore, levi, in maturis humidis pellucide striato in margine, glabro sed veli causa haud nudo, demum denudato, viscido, campanulato-convexo, dein convexo et umbonato humili latoque, 22–27 mm lato; velo appendiculato abundante albo ad marginem, dein evanescente.—Lamellis pallide griseis, dein lilaceo-griseis (7-E-7, M & P), subconfertis, latis, rotundato-adnatis vel adnatis.—Stipite albo, demum ochrascente-pallido, veli causa albo-flocculoso usque ad zonam fibrillosam subannularem, sed haud bene annulato, demum e velo appresse fibrilloso, haud viscoso, cavo, subaequali, 27–52 × 3–4 mm; velo floccoso, demum fibrilloso usque ad zonam subannularem haud bene annulatim evoluto; rhizomorphis albis numerosis.—Contexto albo, immutabili; odore Naematolomatis fascicularis sed debiliore; sapore miti.—Sporis 8–11 × 4.5–7 μ, plerumque 9–10 × 5–6 μ, ovatis, rarius ellipsoideis, levibus, in aqua lilaceis, in KOH fusco-spadiceis vel sepiaceis et interdum olivaceo-tinctis, membrana crassa et complexa munitis, poro germinativo angusto, aut truncato aut vix truncato interdum paullum conspicuo instructis.—Hymenio e basidiis et cystidiis efformato, cheilocystidiis marginato. Basidiis 24–28 × 8–10 μ, tetrasporis, nonnullis bisporis. Cheilocystidiis 28–46 × 8.5–13 μ, ventricosis, constrictis sub apice subcapitata vel claviculari, interdum apiculatis sed plerumque obtusis hyalinis. Cystidiis et chrysocystidiis praesentibus, moderatim numerosis, his 20–52 × 10–14 μ, ventricosis et acutis aut mucronatis mucrone brevi

acuto vel tenui, corpusculo amorpho interno in KOH flavo instructis, conspicuis; nonnullis cystidiis 61–62 × 20 μ, rarius minoribus, ampullaceis sed frequenter semel vel bis constrictis, sparsis, corpusculo flavo destitutis.—Hyphis fibulatis; tramate hymenophorali ex hyphis axialiter dispositis subintertextis vel subparallelis, (5)–6–12 μ latis efformato; hymenopodio ex hyphis filamentosis 2–4.5 μ latis, hyalinis, haud gelatinosis, inter se parallelis efformato. Subhymenio apparenter subcellulari, ex elementis exiguis, brevibus, haud gelatinosis efformato.—Epicute ixocutem praesentante, ex hyphis filamentosis 1–4.5 μ latis, interdum incrustatis pigmento aureo-flavido-ochraceo, gelatinosis et laxe dispositis superficie ipsa nec non parte inferiore exceptis; in illa elementis exiguis stratum tenuissimum efformantibus, in hac stratum tenue epicuticulare efformantibus, zona gelatinosa sublata (usque ad 45 μ). Hypodermio a tramate pilei paullum distincto, haud gelatinoso, intertexto, haud subcellulari, haud pigmentato, ut minime in KOH.—Inter folia delapsa nothofaginea et myrtacea et Drimydis. Typus: CHILE: Santiago: Cerro Robles, 19–VI–1967, Singer M 6975 (SGO).

STROPHARIA CORONILLA (Bull ex Fr.) Quél., Champ. Jura Vosg. p. 237. 1872.

This widely distributed species is well described and illustrated in numerous current European and North American works, e.gr. Smith, Mushrooms in their natural habitat, p. 526, 1949.

Naematoloma

NAEMATOLOMA MYOSOTIS (Fr. ex Fr.) A. H. Smith, Mycologia 42: 323. 1950.

Var. **myosotis:** As for a description see there, and Singer, Trud. Bot. Inst. Kom. Akad. N. SSSR II. 6: 421. 1950 (as *Flammula myosotis*).

Var. **lapponicum** (Fr.) Sing. in Sing. & Digilio, Lilloa 25: 331. 1952. Description see Singer, Trud. Bot. Inst. Kom. Akad. N. SSSR II. 6: 422. 1950.

NAEMATOLOMA ELONGATIPES (Peck) Sing., Lilloa 22: 504. 1951.

For a description and illustration of this fungus, see A. H. Smith, Mycologia 43: 491, 1951 under the illegitimate name *N. elongatum* (Pers. ex Fr.) Konr. and Kühner & Romagnesi, Fl. anal. Champ. Sup. p. 334, 1953 (as *Geophila elongata*, with the respective references).

Our material is typical, having spores that are never lilac or purplish livid in water when fresh, but of two sizes so that I am not certain

whether they belong to one and the same taxon. For that reason, they shall be described separately:

Form A:

Pileus "Sudan br." when wet, "maize" or slightly paler when dry-faded, one to five sixths of radius transparently striate and silky-fibrillose from the veil, soon becoming naked, not viscid, glabrous, hygrophanous, convex, becoming applanate, not umbonate, 10–20 mm broad.—Lamellae gray then grayish brown ("trush" M & P), broad or rather broad, white fringed, rather close to subdistant, adnate. Spore print "cocoa" (M & P) when fresh.—Stipe brown ("chipmonk") below, paler and pruinate above, or even stramineous in the whole upper portion, reaching "Peruvian br." or "tortoise" below and eventually often also above, at least in zones and spots, glabrous or very slightly fibrillose and glabrescent, equal or subequal, 17–45 × 1–2.5 mm; veil not annular.—Context watery-hygrophanous; odor very slight, raphanaceous.

Spores 9.5–12.3 × 6–7.2 μ, most frequently about 10.5 × 6.2 μ, ellipsoid, ocher-brown-melleous or brownish ochraceous in water when freshly prepared, in KOH the same color but with a slight reddish brown line along the endosporium with rather thick compound wall, smooth, with distinct truncate germ pore.—Basidia 21–28.5 × 9 μ, 4-spored. Chrysocystidia numerous on edges and sides, 33–43 × 14–15 μ, ventricose, broadly rounded above or with a narrow, small apiculus above, with yellow body (KOH) inside. Cheilocystidia 20–35 × 6.8–11 μ, cylindric to ventricose, frequently constricted above basal or central ventricosity, obtuse, hyaline, numerous.—Hyphae not gelatinized, with clamp connections.—Epicutis of pileus a non-gelatinized cutis. Hypodermium with very strongly shortened and broadened elements.

In *Sphagnum* inside and outside the woods, also in low places among Juncaceae and smaller mosses, usually in large groups.

Material studied: ARGENTINA: Tierra del Fuego: Near Estancia Nueva Argentina (Rio Grande), 12–II–1950, Singer M 212 (LIL).—CHILE: Llanquihue: 2 km west of Puerto Pargua, 9–V–1967, Singer M 6820 (SGO).

Form B:

Pileus brown ("tortoise shell" to 14–E–11, M & P), when quite young "Peruvian br." all over, soon pale sordid gilvous (11–D–3, M & P) on margin, fading to pale dull ochraceous (11–G–5, M & P), smooth and glabrous, not viscid, campanulate-convex then convex, 8–19 mm broad.—Lamellae grayish brown (13–F–7), then "isabella" or tan to brownish gray ("aloma", "soapstone"), medium broad, subdistant, adnate- to adnate-subdecurrent. Spore print very deep brownish purple ("moose" M & P).—Stipe brown ("seminole" M & P) but upper wide portion

melleous-pallid, with pruinate apex, below innately silky-striped, equal or tapering downwards, 45–90 × 1.5–2.5 mm; veil scanty, present only in young specimens as a melleous-ocher-pallid mainly marginal overcast, not well developed on stipe.—Context with very slight odor.

Spores 8.8–10.5 × 5.8–6.8 μ, ellipsoid, smooth, ochraceous brownish or brownish ochraceous, also in water when fresh, with a reddish brown line along the endosporium when dried material is studied in KOH, with a narrow non-truncate germ pore rarely with a slightly truncate one.—Basidia 28 × 7.7–8.3 μ, 4-spored. Chrysocystidia 30–57 × 9–12.5 μ, thin-walled, with yellow amorphous internal body (KOH), ventricose-subampullaceous, pedicellate. Besides cystidia on the sides of the lamellae which lack the yellow inclusion, 36–39 × 8.3–8.7 μ, ventricose, ampullaceous, with ocher brown incrustation all over. Cheilocystidia mixed with basidia and the two types of cystidia, e.gr. 27 × 5.3–5.5 μ, fusoid to ventricose but rather narrow, attenuated up and downwards, obtusate, without yellow inclusion, all hyaline, often with pedicel.—Hyphae with clamp connections, not gelatinized, in hymenophoral trama hyaline to dull and pale ochraceous.—Epicutis of pileus—a thin cutis, not at all gelatinized, a thin layer and poorly differentiated from the hypodermium where the hyphal elements are subcellularly arranged and broader than in the epicutis, mixed with more elongated elements (11–16 μ broad), brown from a membranal and an incrusting pigment.

Under and near *Fitzroya* in *Sphagnum*, 900–1000 m alt., in fall.

Material studied: CHILE: Valdivia: Cordillera Pelada, south of Mirador, March 1963, Singer M 3215, M 3206 (BAFC).

This second form is undoubtedly different from the first, but I do not wish to name it at present, because it may well be identical with one of the many "synonyms" of this species. It differs principally in smoother pileus, different spore print color, and smaller spores, larger chrysocystidia. Although *N. humidicola* has the cystidia of this form, the gelatinized epicutis of that American species separate them immediately. *N. polytrichi* sensu Kühner has still smaller spores although material collected by me in France had spores 9.5–10.5 × 6–(6.5) μ, but the epicutis seems to be better developed and the pileus more frequently umbonate than in our form.

NAEMATOLOMA PUIGGARII (Speg.) Sing., Agar. mod. Tax. p. 541. 1962 ex Sing. comb. nov.

Flammula puiggarii Speg., Bol. Acad. Nac. Cienc. Córdoba 11: 418. 1889.

Pileus very bright and deep lateritious-rufous ("Maroccan" "bric dust" M & P) reaching "Cuba", "wallflower", young between "Coromandel" and "caldera", later developing an "Indian red" center, on margin

gradually reaching "copper luster", in a narrow zone, but also showing such shades as "Korea" and "Nasturtium", glabrous, smooth, viscid, opaque or not, when drying, rarely with short-sulcate or crenate margin which is appendiculate from white floccons of the veil in the young stage, later becoming naked, convex, later flattening in center or subumbonate, eventually often plane to concave, 9–90 mm broad.—Lamellae at first whitish, very soon becoming gray ("pelt" M & P), even violet gray (7–A–9, or as deep as "bear" to "wrought iron") then sepia, broad, ventricose, with white edges, close or subclose, sinuate-adnate or adnate. Spore print in thin layer "Rosetta", in thick layer between "moose" and 8–C–3 M & P, i.e. a typical Strophariodeae color.–Stipe white, but with some yellowish or more often lateritious to reddish or orange red tones (e.gr. "Sierra, Venetian", "Autumn glory"), especially in lower half, young also at times entirely white, later rarely all fire red including base, usually without an annulus but with some appressed fibrillose, dry veil remnants in the earlier stages, later glabrescent, more rarely with a very fragmentary and not persistent annulus, hollow, equal or with enlarged base, 20–85 × 2–8 mm; veil white, at times annuliform but not persisting, almost always appendiculate on pileus and at times also covering a marginal zone of the surface of the pileus, but old specimens usually naked; basal mycelium strigose, white or sordid cream "maple" to "raffia", M & P).—Context concolorous with the surface in a peripheric zone of the pileus and mostly in the lower portion of the stipe, under the cuticle at times near "Cordova" or orange. Taste mild or slightly bitterish like some Naematolomas; odor also at times slightly like other Naematolomas e.gr. *N. fasciculare*, but often entirely absent.

Spores 10.8–13.3 × 6.2–7.5 μ, ellipsoid, smooth, lilac in water when fresh, dried sepia or brown in KOH, with a broad truncate apical germ pore.—Basidia 28.5–36 × 8.2–9.5 μ, (2)–4-spored. Chrysocystidia 60–83 × 5–8.5 μ, ventricose but obtuse or almost so, rarely narrowly fusoid, often incrusted by a golden pigment, with an amorphous internal body (in KOH). Cheilocystidia similar, without yellow internal body, crowded, hyaline.—Hyphae with clamp connections, subhymenium consisting of short and small hyaline, non-gelatinized elements, the hyphae of the next-following layer all, axial and parallel with each other and rather narrow forming a broad hymenopodium, more interwoven and broader or at least showing some shortened and broadened elements in the central strand.—Epicutis a somewhat gelatinized cutis-like structure of filamentous smooth hyphae. Hypodermium cellular as in all typical Naematolomas.

On the earth, fallen sticks, on buried *Chusquea* culms, and on seeds of *Arecastrum romanzoffianum* and on rotten logs and leaves of *Salix hum-*

boldtiana; sometimes among grass and herbs, usually in shaded places, attached to the substratum by more or less developed white rhizomorphs, fruiting in fall and winter.

Material studied: ARGENTINA: Buenos Aires: Santa Catalina, 19–IV–1963, Singer S 403 (BAFC).—Delta, 29–VII–1962, leg. L. Betucci (BAFC).—San Isidro, 12/24–VI–1963, leg. Gamerro (BAFC).—Villa Devoto, 4–V–1962, Singer T 3885 (BAFC).—Leg. Wright, 12–IX–1958 (BAFC).—URUGUAY: Maldonado, 27–V–1966, Singer B 4147 (BAFC). —BRAZIL: Sao Paulo: Apiaí, leg. Puiggari (LPS), typus.

This unmistakable species, often encountered opaque and dry but viscid to even glutinous in humid conditions, is rather common from Central Argentina to South Brazil, but its southern limits are still not defined.

NAEMATOLOMA aff. *RADICOSUM* (Lange) Konrad & Maubl. Icon, Sel. Fung. 6: 104. 1924–37.

Our material shows a few aberrant characteristics, and is therefore described below:

Pileus olive, not viscid or hygrophanous, rather fleshy, glabrous and smooth, size of *N. sublateritium*.—Lamellae yellow, then grayish yellow, dried like milk coffee, broad, close, emarginate. Spore print "Java" (M & P).—Stipe yellow, ochraceous brown in the buried portion, subglabrous, flexuous where buried, with a long pseudorrhiza-like prolongation leading to buried wood, size of epigeous portion like that of *N. sublateritium*, but total length of stipe double that of the epigeous portion; veil on the fibrillose stipe surface scarcely developed.—Context yellow; odor strongly like that of *Naematoloma fasciculare*; taste bitter.

Spores 6–7.2 × 3.8–4 μ, ellipsoid, not reniform, some with suprahilar depression, others not, smooth, in accumulations in KOH rather deep rusty ochraceous, in single cell view paler melleous ochraceous, in water pale melleous when fresh, without a germ pore, or with an extremely narrow non-truncate one which is difficult to observe even in KOH under oil immersion, with moderately thick compound wall.—Basidia 23 × 5.5 μ, 4-spored. Chrysocystidia numerous on edges and sides, 20–46 × 8–9.5 μ, ventricose to clavate-mucronate, mucro usually short and acute, more rarely more elongated-fusoid, not incrusted, with distinct yellow amorphous internal body (KOH). Metuloids also present, these 30–35 × 6–8.5 μ on both edges and sides of the lamellae, fusoid with rounded tip or somewhat ampullaceous, with the walls tending to be thick (up to 2.5 μ), without enclosure but sometimes filled with yellow sap, mostly incrusted by a resinous of the thick, fulvous or rusty fulvous outer wall. Cheilocystidia 26–30 × ± 5 μ, slightly ventricose below and effilate

above, many with constrictions in the effilate portion which is about 2.5 μ broad, numerous.—Hyphae with clamp connections, mostly appearing yellowish, with a granular intercellular strongly developed. Hymenophoral trama strongly yellowish, regular, of elements of very different size, essentially parallel or subparallel, not gelatinized.—Epicutis of pileus not a pellicle but a layer of filamentous non-gelatinized hyphae forming a cutis. Hypodermium also a cutis but in its lower level appearing cellular or subcellular, with its elements often curved and running in all directions and some isodiametric or subisodiametric ones intermixed, chestnut-rusty brown.

Material studied: CHILE: Valdivia, Cordillera Pelada, at 850 m alt., near *Fitzroya, Weinmannia, Gevuina, Drimys, Saxegothaea* on buried roots of a tree or shrub, in fall: 6–V–1965, leg. Singer M 5527 (BAFC).

This is not identical with the species as described by A. H. Smith, Mycologia 43: 501. 1951 although very similar, and perhaps no more than a variety or form. It is certainly the *H. epixanthum* as indicated by Bresadola from Tierra del Fuego.

NAEMATOLOMA FASCICULARE (Huds. ex F.) Karst., Medd. Soc. Fauna Fl. fenn. 5:61. 1879.

This common wide-spread species has been described and illustrated in many recent publications, for example in Smith l.c. p. 516, and Mushrooms in their natural habitat, p. 513.

Naematoloma castilloi Sing. spec. nov.—Pileo fulvo-ochraceo-brunneo in centro, flavo vel flavido in zona marginali, haud hygrophano, subviscidulo vel viscido in humidis maturis, glabro, nudo, levi, convexo, 8–32 mm lato.—Lamellis flavis, dein sordide olivaceis, angustis, confertissimis vel confertis, adnatis. Sporis in massa atropurpureo-brunneis (inter "Java" et 48–H–1 M & P).—Stipite flavido vel brunneolo, squamis squarrosis zonatim cingulato et ex toto (apice excepto) tecto vel squamulis fibrillosis appressis vel subappressis zonatim cingulato, semper plus minusve brunneo-squarruloso, sed supra annulum nudo et laevigato, plerumque plus minusve annulato, sicco, aequali, 30–82 × 2–10 mm; annulo bene evoluto repandoque, flavido, in parte inferiore brunneolo, saepe collabente in maturis, rarius (praesertim in speciminibus minoribus) paullum evoluto et subnullo; pseudorrhiza omnino absente.—Contexto flavido vel flavido-albo, inodoro, miti.—Sporis 5.7–6.3 × 3.7—4.7–(5) μ, rarius usque ad 7 μ longis, ellipsoideis vel subovatis, levibus, episporio brunneo-atro, endosporio ochro-hyalino munitis, e fusco ochraceis, poro germinativo lato truncato praeditis.—Basidiis 16–18.8 × 5–6 μ, tetrasporis. Chrysocystidiis numerosissimis et conspicuis, 18.5–30 × 6.5–8.2 μ,

clavatis vel ventricosis, interdum ampullaceis, ceteris mucronatis, rarius obtuse rotundatis, hyalinis sed corpusculo interno hyalino-flavido vel aureo (KOH) munitis. Cheilocystidiis variabilibus, 8–25 × 3.5–8.5 μ, aut chrysocystidiis simillimis sed corpusculo interno amorpho destitutis aut cheilocystidia Inocybarum subvesiculosa aemulantibus, raro mucronatis, raro filamentosis, hyalinis vel ochraceis, tenui-tunicatis, numerosis.—Hyphis in KOH plerumque hyalinis, fibulatis, sed demum in praeparationibus alcalinis luteo-tinctis pigmento intercellularis causa, in tramate hymenophorali regulari membrana usque 1.8 μ crassa munitis, parallelis, latis (usque ad 38 μ latis); in hymenopodio angustioribus, tenui-tunicatis, 6–32 μ latis, parallelis; subhymenio ex elementis exiguis brevibus hyalinis efformato, in tramate pilei subradialiter dispositis.—Epicute pilei cutem repraesentante in qua stratum tenue externum sat manifeste gelatinosum est, parte latiore inferiore haud gelatinosa. Hypodermio subcellulari vel cellulari, pigmenti incrustantis brunneolo-ochracei causa colorato, nonnullis elementis subfilamentosis intermixtis, eis et hyphis epicuticularibus 3.5–6.3 μ latis.—Ad terram in ligno immerso aut ad ligna putrescentia, fasciculariter, autumno et verne. Typus ARGENTINA: Laguna Frías, Rio Negro, 24–III–1963, Singer M 3133 a (BAFC).—21–III–1963, M 3133 (BAFC), paratypus.—Camino de la Laguna Frías al Paso de las Nubes, 19–XI–1965, Singer M 4050 (BAFC), forma vernalis, minor, exannulata. —A *N. sublateritio* sporis brevioribus, poro germinativo truncato bene evoluto nec non annulo saepe bene evoluto differt; a *N. fasciculari* tegumento stipitis nec non sapore miti differt; a *N. capnoide* lamellis haud griseis differt, a *N subochraceo* sporis maioribus, pellicula pilei tenuiore differt.

NAEMATOLOMA CAPNOIDES (Fr. ex Fr.) Karst., Medd. Soc. Fauna Fl. fenn. 5: 61. 1879.

Several collections key out with this species and are similar to European collections of it. A good description of North American material can be found in Smith l.c. p. 508. Our material coincides well with this description as far as the macroscopical characteristics are concerned, but microscopically it shows a rather wide range of characters which do not coincide from one collection to the other and not in all characters coincide with Smith's account.

CHILE: Valdivia: West slope of Cordillera Pelada at 750 m alt., on dead stump of *Saxegothaea*, 30–III–1963, Singer M 3249 (BAFC).—This has "tan", heather (M & P) pileus with "Alamo" to "Mohawk" center and "empire yellow" (M & P) margin, sordid marginal veil, ochraceous stipe with yellowish pallid apex and pallid to pale brownish fibrillose-squamose stipe, mild taste. The spores are here broad, 6.7–7 × 5.8 μ, with distinct

germ pore, chrysocystidia e.gr. 30 × 7.5–8.5 μ, clavate and narrowly mucronate, cheilocystidia narrowly ventricose to subclavate, 10 × 3–4 μ.

CHILE: Osorno: Lago Puyehue: 14–IX–1967, Singer M 6911 (SGO). —This has grown on what seemed to be an *Aextoxicum* trunk (not coniferous), and had partially somewhat hygrophanous pileus which is even transparently striate in the marginal zone, orange chestnut-fulvous in the center, yellowish on margin, squamose to squarrose stipe, mild taste. The spores are 6–5–(8.5) × 4.2–4.5–(5) μ.

CHILE: Valdivia: Cuesta Sta. Elvira, 15–V–1967, Singer M 6911 (SGO). This has deep ochraceous brown pileus and stipe which dried become deep red brown ("Hindu", outside "chutney" M & P). The taste was mild, but the odor slightly of phenol. This had spores 6.5–7.5 × 4–5 μ, with truncate germ pore, olive fuscous. Chrysocystidia as in M 3249, but cheilocystidia yellow, ventricose to vesiculose-clavate, 14–18 × 7–9 μ. It grew on *Eucryphia* trunk (not coniferous!).

CHILE: Valdivia: Hueycolla, 1/4–V–1967, Singer M 6716a (SGO). This grew on *Podocarpus* trunk, macroscopically as M 6911; spores 6–6.5 × 3.5–3.7 (8 × 4.5) μ, with distinct germ pore, dusky olive fuliginous. Chrysocystidia rather numerous; cheilocystidia vesiculose to ventricose, hyaline to yellow, 11–18 × 6–9 μ, mostly 11 × 9 μ. Epicutis not at all gelatinized; hyphae with granular intercellular pigment; hypodermium subcellular.

This latter specimen was already very close to the following species from which some collections of *N. capnoides* are difficult to separate, but it had the broad and characteristically gray lamellae of the latter species and grew on coniferous host.

There is much work to be done in order to clearly elaborate the limits between the species of the Fascicularis-stirps in South America. For the time being our data are not sufficient in order to succeed.

NAEMATOLOMA SUBLATERITIUM (Fr.) Karst., Bidr. K. Finl. Nat. Folk 32: 495. 1879.

This species, although mostly lacking the brick red color generally considered characteristic for it, and having more or less fibrillose to squarrulose stipe agrees well with the descriptions given by Smith, l.c. p. 505 and Kühner's concept but the spores were consistently found to be provided with a distinct germ pore which is mostly clearly truncate. The spores are 6–7–(8) × 3.5–4.5–(5) μ in our material. I do not know whether it is possible to still consider this fungus conspecific with the European type. It is however very common from Coquimbo to Tierra del Fuego, also on burned wood.

Psilocybe

Psilocybe araucana Sing. spec. nov.—Pileo fusco vel melleo-fusco-argillaceo (15–1–12 M & P), in zona inter marginem et centrum vel interdum omnino brunneo-argillaceo ("clay" M & P), interdum margine pallido gaudente, hygrophano, de centro marginem versus usque ad melleo-pallidum pallescente, viscoso, levi, sed ad marginem breviter vel usque ad tertiam radii pellucide striato vel striato-sulculato, juventute plerumque omnino levissimo, convexo, juventute campanulato, subumbonato vel umbonato, interdum obtuso, margine primum incurvato, 8–32 mm lato.—Lamellis argillaceo-griseis dein purpureo-brunneis (15–H–10, M & P), sat latis vel latis, ventricosis vel subventricosis, subconfertis vel mediocriter confertis, sinuatis vel adnexis.—Stipite albo, dein submelleo e basi, partim minute fibrilloso, sicco, aequali vel leniter incrassato apicem aut basin versus, solido vel farcto, 22–57 × 1–5 mm; velo cortiniformi, albo, raro vestigium subannuliforme cortinoide fugax medianum formante, plerumque subnullo in maturis.—Contexto albo vel alutaceo-albo, in basi demum fulvescente, sed in interiore farcto stipitis albo, superficiem versus ibi tactu vel fractu partim caerulescente; odore debili saponaceo vel subnullo; sapore miti.—Sporis 8–12.5 × 5.5–7.2 μ, ellipsoideis, haud vel vix lentiformibus, levibus, poro germinativo late truncatis, membrana complexa crassa institutis, atrobrunneis (KOH).—Hymenio e basidiis et cystidiis efformato; basidiis 19–27 × 7.3–8.8 μ, omnibus tetrasporis vel (2)–4-sporis; cystidiis ad acies et latera lamellarum subaequalibus, ad latera vix projicientibus et moderatim conspicuis, ventricoso-mucronatis vel ampullaceis, 16–31 × 4.5–8.8 μ, apice aequali vel attenuatis, raro subcapitatis, 1.2–3.5 μ diam., ex toto hyalinis, tenui-tunicatis, ad latera moderatim numerosis, acie subheteromorpha.—Hyphis hyalinis vel pallidissime stramineis, fibulatis, in tramate hymenophorali regulariter dispositis sed haud stricte parallelis.—Epicute pilei hyalina, gelatinosa, hyphis repentibus, 3–3.5 μ latis, levibus.—In pascuis et silvis, semper sub arboribus (Nothofagus, Austrocedrus), interdum circum fimum, gregatim vel subcaespitose.—Typus, a R. Singer collectus (M 3402, BAFC, SGO) est.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 900 m alt., 22–IV–1964, Singer M 3402 (BAFC, SGO).—Villa Angostura, 22–IV–1965, Singer M 5200 (BAFC).—Lago Correntoso, 16–IV–1965, Singer M 5014 a (BAFC).

PSILOCYBE CAESIOANNULATA Sing. in Sing. & Moser, Mycopath. et Mycol. Appl. 26: 165. 1965.

Description see there, with illustrations.

Psilocybe sierrae Sing. spec. nov.—Pileo badiofulvo, unicolori, subviscido, levi, glabro, margine incurvo dein stricto, campanulato, 5–6 mm lato, 4–5 mm alto; velo primum appendiculato vel floccoso, albo, mox nullo.—Lamellis porphyrio-brunneis vel brunneolo-castaneis, primum pallidis, acie alba marginatis, subconfertis vel subdistantibus, latis, adnatis. —Stipite albido-pallescente, demum leniter brunneolo-discolorato, prope apicem pruinato, subtus glabro, aequali vel subaequali, farcto dein cavo, 15–20 × 1–1.5 mm; velo sericeo-fibrilloso, albo, primum annulum incompletum fibrillosum fugacissimum formante, in maturis in zona annulari tantum leniter sericeo-subfibrilloso; e protocarpio sclerotoideo vel prope hoc formato.—Contexto albo vel albido, demum tactu et fractu partim caerulescente, praesertim prope basin; odore nullo vel debili.— Sporis 11–14–(14.3) × 6.3–8–(8.3) μ, ellipsoideis, haud lentiformibus, late poro truncatis, membrana complexa crassiucula instructis, olivaceo-fuscis vel melleo-fuscis (KOH).—Hymenio e basidiis efformato et cheilocystidiis marginato; basidiis 23–30 × 8.3–12.5 μ, hyalinis, tetrasporis; cheilocystidiis marginem latum sterilem efformantibus, 17–31 × 4–6 μ, ventricosis sed apice acuto vel obtuso 1–1.2 μ lato, interdum furcato-duplici instructis, hyalinis, tenui-tunicatis, parte apicali 5–10 μ longa.— Hyphis ochraceo-pallidis vel hyalinis, fibulatis, in tramate hymenophorali subparallelis et 6–7 μ latis, membrana firm et interdum subcrassiuscula instructis, in hymenopodio similibus sed subangustioribus, haud gelatinosis.—Epicute pilei hyalina, gelatinosa ex hyphis filiformibus usque ad 3 μ latis, repentibus, interdum ex incrustatione subochracea pigmentatis; hypodermio sat lato, castaneo, pigmento partim incrustante atrocastaneo instructis, membrana usque ad 0.8 μ crassa.—Ad fimum et ad quisquilias fimo mixtas.—Typus in CHILE, Maule, inter Chovellén et Trehualemu, 3–VIII–1967 a R. Singer collectus et in SGO depositus est.

This species belongs in stirps *Caerulescens*, but produces the same kind of "sclerotia" that were observed by R. Heim in *P. mexicana*. This may be close to *Psilocybe sclerotifera* (Speg.) Sing. comb. nov. (*Stropharia sclerotifera* Speg., Bol. Acad. Nac. Cordoba 23: 38. 1919), provided that the latter belongs in the *Caerulescentes*, but differs in smaller size of the fruiting bodies, darker colors and absence of an annulus.

PSILOCYBE SUBCOPROPHILA (Britz.) Sacc., Syll. F 11: 72. 1895.

Pileus ochraceous brown ("burnt umber" to "kis kilim"), hygrophanous, fading to ochraceous ("Yucatan" + "Inca gold" M & P), viscid, half transparently striate when fresh, smooth, convex, obtuse, rarely slightly umbonate, 5–20 mm broad; veil at first pallid appendiculate, faintly to distinctly so, but soon naked.—Lamellae whitish, then gray ("seaside Ormond" M & P), eventually "chocolate", never lilac, very

broad, subdistant, adnate. Spore print fresh 8–E–2 in thin, 8–A–4, M & P in thick layer.—Stipe sordid pallid on brown or brownish ground, often appearing buff, floccose-fibrillose or fibrillose-subsquarrulose especially when young and near apex, subequal or tapering downwards, 10–50 × 0.5–1.8 mm; veil never forming an annulus; basal mycelium pure white.—Context brownish, inodorous.—Spores 15.5–19.2–(20) × 8.8–10 μ, ellipsoid to oblong, neither rhombic nor lentiform, smooth, with thick complex wall, with broadly truncate germ pore, olivaceous-fuscous or ochraceous brown in KOH, fresh dull lilac or brownish lilac in water.—Hymenium: Basidia 40 × 12.5–15 μ, 2–4-spored, or all 4-spored, mostly thin-walled, but some with walls occasionally to 0.4 μ thick. Cheilocystidia 24–28–(36) × 7.8–11 μ, ventricose below, with subcylindric apex (apex 8–25 × 2–3 μ) which is rarely obtuse and then reaching up to 4 μ in diameter, hyaline, mostly with protoplasmatic contents, hyaline, making the edge heteromorphous; pleurocystidia rare and only very near the edges, without protoplasmatic contents, otherwise like cheilocystidia.—Hyphae with clamp connections.—Epicutis of pileus a broad gelatinized layer; hypodermium deep fulvous but without strong pigment-incrustation, when seen in KOH.—On dung, gregarious.

Material studied: ARGENTINA: Tierra del Fuego: Ushuaia, April 1960, leg. Heidi A. Singer (SGO).—CHILE: Santiago: Cerro Robles, 19–VI–1967, Singer M 6970 (SGO).—Termas de Colina, 11–VI–1967, Singer M 6962 (SGO).

This is often taken to be a variety of *P. coprophila*. *Deconica australis* Horak, Darwiniana 14: 363, 1967 (type seen at LPS) seems to be the same.

Psilocybe argentina (Speg.) Sing., comb. nov.

Deconica argentina Speg., An. Mus. Nac. Bs. As. 6: 152. 1899.

Pileus chestnut-brown (between "kis kilim" and "Arab", M & P), hygrophanous, not viscid or somewhat subviscid-opimous, often slightly shining when dry, smooth and glabrous, semiglobate or convex, obtuse or rarely subumbonate, 8–16 mm broad.—Lamellae fuscous-gray to dull buff, eventually rather deep fuscous-argillaceous, broad, broadly adnate, pulverulent from the deep purple brown spore dust when old, on edge more or less pallid, subdistant to medium distant.—Stipe buff, eventually grayish argillaceous or partly concolorous with the pileus, paler fibrillose, eventually unicolorous, equal or subequal, 15–40 × 1.3–3 mm; veil in adult specimens nearly nil; basal mycelium white.—Context subconcolorous with the surfaces, inodorous.—Spores 11.8–15.2 × 8.3–10 × 7.2–8.5 μ, broadly ellipsoid to citriform when seen frontally, lentiform, ellipsoid in profile, with thick compound wall, with broad truncate germ pore, smooth, amethyst color in water mounts when fresh, chestnut when

mounted in KOH.—Hymenium: Basidia 28–32.5 × 10–13 μ, hyaline, clavate, 4-spored. Cheilocystidia subulate and often distinctly ventricose below, effilate in upper half or third, hyaline, with obtuse tip, thin-walled, 27–45 × 4.5–8.2 μ; pleurocystidia none (occasionally some inconspicuous filamentous body entering the hymenium).—Hyphae of trama hyaline, with clamp connections, radially arranged in pileus and regularly arranged in hymenophoal trama.—Epicutis of pileus—a broad hyaline cutis which is scarcely or not gelatinized excepting at times, in places, in the outermost stratum where one or another hypha is curved and subgelatinized. Hypodermium rather irregular, but not subcellular, its upper portion brown, some elements as short as 18 × 11.7 μ.—On dung, mostly outside the wooded areas, but often under the shade of trees, gregarious.

Material studied: ARGENTINA: Buenos Aires: Sierra de la Ventana, Cerro Pillihuenco, 350 m alt., 14–XI–1962, Singer S 224 (BAFC).—S 224, about 400 m alt.—Club Hotel of Sierra de la Ventana, 15–XI–1962, Singer S 351 (BAFC).—La Plata, Parque, typus (LPS).

Psilocybe lazoi Sing. spec. nov.—Pileo castaneo-fulvo, nitente, hygrophano, statu dehydratato sordide pallescente centroque fulvido, primum subviscido, dein haud viscido, glabro, ad marginem qui demum recurvatur, debiliter pellucide striatello, campanulato-convexo dein conico-applanato, umbone sat lato obtusoque praedito, magnitudine *P. argentinam* in mentem revocante; velo primum tegumentum tenue sericeum marginale formante sed margine mox denudato.—Lamellis brunneis, confertis vel subconfertis, latis, ad aciem anguste pallescentibus, adnatis.—Stipite atro-castaneo-fusco ad basin, lamellis concolori ad apicem, subtenui, pro ratione breviusculo; velo pallido, fibrilloso, haud annuliformi, sat fugaci. —Contexto inodoro.—Sporis 7–7.5 × 4.5–5 × 4–4.5 μ, leniter sed manifeste lentiformibus, haud rhomboideis, lateraliter ellipsoideis, poro germinativo truncato praeditis, pro ratione pallide melleo-brunneo-pigmentatis, membrana complexa crassa praeditis.—Hymenio: Basidiis 15–23 × 5–7 μ, hyalinis, clavatis, paucis pallide stramineis, (2)–4-sporis. Cheilocystidiis 19–28.5 × 6–6.5 μ, numerosissimis, fusiformi-ampullaceis, apice brevi vel longiusculo praeditis, hyalinis, apice 4–14 × 2–2.3 μ. Cystidiis 8–26 × 5–7 μ, clavatis vel clavato-mucronatis vel clavato-lobatis, contentu omnino destitutis, admodum sparsis, hyalinis. Chrysocstidiis 19–28 × 6–12 μ, sat numerosis, vesiculoso-pedicellatis vel clavatis, vix umquam mucronatis, tenui-tunicatis, contentu bacilliformi-rhabdomorpho agglomerato vel amorpho pallido vel aureoluteo repletis.—Hyphis fibulatis, in tramate hymenophorali regulari brunneo-tunicatis et 3–8 μ latis.—Epicute pilei e cute sat tenui hyalina, in parte superioris eius strati

debiliter gelatinisata, in parte inferiore haud gelatinosa; hypodermio subcellulari (nonnullis elementis subisodiametricis), partim pigmento brunneo-fusco tenuiter incrustatis, haud gelatinoso.—Ad fimum.—Typus a cl. Lazo in CHILE, Colchagua, Pumanque, 1967 collectus et in herbario SGO conservatus est, W. Lazo no. PU-151.

This species is apparently rare and remarkable because of its chrysocystidia which it has in common with both *P. chrysocystidiata* and *P. alnetorum* from which it differs in habitat. *P. chrysocystidiata* is an unpublished species from Bolivia which has smaller spores and grows on dead wood. *P. alnetorum* see Singer & Digilio, Lilloa 25: 332, 1952. *P. cokeriana* Smith (= *Deconica cokeriana* [Smith] Sing. in Sing. & Digilio), a North American species (cf. Journ. Mitch. Soc. 62: 193. 1946), is likewise lignicolous and with spores smaller than in *P. lazoi.*

Psilocybe merdaria var. **macrospora** (Møller) Sing. comb. nov.

Stropharia merdaria f. *macrospora* Møller, Fungi Faeröes 1: 195. 1945.

Pileus gilvous-pallid or pale clay color to ochraceous, somewhat hygrophanous, fading, especially in the marginal zone, to buffy whitish, slightly viscid, the darkest specimens in youth about 12–G–8 on margin and 11–E–6 (M & P) in center, becoming slightly paler when mature unless the underlaying (below the epicutis) trama becomes blotched with brown, glabrous, dry opaque and generally buffy white to pale dirty ochraceous, smooth, 8–18 mm broad; veil white, fibrillose, on the extreme margin only in young and not rain-washed material.—Lamellae just off pallid, then a dull light brown ("Seminole" M & P), then becoming tobacco brown and finally a deep purplish brown, at times almost fuliginous, broad, rather close to rather distant, broadly adnate. Spore print (purplish-) fuliginous.—Stipe white or whitish, dry, fibrillose or slightly silky-fibrillose below the zone of attachment of the veil, above this pruinate, equal, or slightly constricted in the middle and/or at apex, with at times slightly tapering or slightly swollen base, in the latter case occasionally reaching up to 5.5 mm diam. there, 22–43 × 1.5–3.5 mm; veil at first usually annuliform, but ring narrow (up to 1 mm distant) and rather fugacious, thin, and generally not found intact in mature material, white, mostly slightly striate.—Context concolorous with the surfaces, becoming tawny or brown (15–E–12, M & P) entirely or in part when older. Odor none.—Spores 10.5–15 × 7.5–9.7 × 6.8–7.7 μ, in frontal view somewhat rounded-hexagonal or citriform in some, broadly ellipsoid in others, slightly and not always lentiform, but undoubtedly many spores broader in frontal than in laterial view, ellipsoid in profile, with thick compound wall, smooth, with broad truncate germ pore, bister or olive chestnut brown in KOH, when fresh in water mount

varying from lilac-livid to lilac-violet but in 2 year old herbarium specimens only lilac brown to ocher brown, and slowly becoming dusky melleous when alkali is added to medium.—Hymenium consisting of basidia, bordered by cheilocystidia; pleurocystidia none.—Basidia 27–35 × 10–11.3 μ, clavate, hyaline, 4-spored. Cheilocystidia 23–40 × 4.3–11.3 μ, apex attenuated and in length occupying 1/3 to 2/3 of entire length of the cell, and cylindrical-equal to filamentous, more rarely with slightly subcapitately enlarged tip, subulate to ampullaceous, with the swollen base or the ventricose center often somewhat pedicellate, with obtuse tip which is e. gr. 3.7 μ broad, but reaches up to 5.5 μ if subcapitate, without visible contents and hyaline, making the gill edge heteromorphous.—Hyphae with clamp connections, somewhat brownish and regularly arranged although not fully parallel in the hymenophoral trama.—Epicutis of the pileus hyaline, gelatinized, of filamentous hyphae which are not parallel with each other and not strongly removed one from another (weak gelatinization); hypodermium of strongly interwoven hyphae and hardly a true cutis nor subcellular either, consisting of broad but elongated elements, brown, but not showing a strong pigment incrustation.—On horse and cow dung.

Material studied: CHILE: Valdivia: Cordillera Pelada, 23–III–1963, Singer M 3224 (BAFC).—ARGENTINA: Tucumán: Infiernillo, 2–I–1960, Singer B 3045 (LIL).—SCOTLAND, Peebles, August 1964, Singer (C 4015) & M. Lange (BAFC).

This species, as far as its type form is concerned, is, according to Huijsman (Persoonia 2 : 93–94. 1961), supposed to have spores only 10.7–12.4 × 6.5–7.5 μ, thus definitely smaller than those of the species here described whose spore measurements coincide well with those indicated by Møller l.c. The veil is here much stronger than in *P. merdicola* Huijsman l.c. which I have found in North America in a fertilized *Dahlia* bed, cespitose in large numbers (U.S.A.: Mass.: Arlington, 12–XI–1946, Singer, FH), and in full agreement with Huijsman's description. In this specimen, I find the spores lilac in water when studied fresh, but olive with partly chestnut or reddish chestnut wall in NH_4OH.

I have raised the macrosporous *merdaria* to varietal status because its true status from a genetic point of view, and from exact area studies cannot be established at present, yet its separability with regard to typical *P. merdaria* var. *merdaria* cannot be doubted, although some authors seem to combine them (e. gr. Kühner & Romagnesi, p. 336, who give the following spore measurements: 10–16 × 6–10–(12) × 6.7–8.2 μ).

Psilocybe praetervisa Sing. spec. nov.—Pileo brunneo (inter "oak" et "cocoa" M & P), in zona externa (marginali) dilutiore, subhygrophano,

debiliter pellucide striatello per 1–2 mm marginales in maturis, ceterum levi, semigloboato, obtuso, 6–12 mm lato; velo primum albo, appendiculato, minutissimo et fugaci.—Lamellis griseis (visis a basi stipitis: "log cabin", in sectione pilei: "camel's hair +" M & P), latissimis, ventricosis vel planis, subdistantibus, ad aciem albis, late adnatis.—Stipite albido; inodoro; sapore miti, nec raphanaceo nec farinoso.—Sporis 12–12.7 × 8–8.3 × 7–8 μ, debiliter lentiformibus, subcitriformibus, sed lateraliter visis ellipticis, poro germinativo manifesto et membrana complexa crassiuscula munitis quae in KOH leniter tumescit ita ut sporae in aqua visae 11.7–12.3 × 6.7–8 μ tantum mensimus, vegetis in aqua brunneolo-lilaceis, in KOH spadiceo-brunneis, levibus.—Hymenio: Basidiis 27–33 × 8.5–10.5 μ, hyalinis, tetrasporis. Cheilocystidiis 22–44 × 4.5–7.7 μ, apice 11–17 × 2.5–4.2 μ obtuso praeditis, latioribus vel ventricosis in parte inferiore, hyalinis, tenui-tunicatis, ex eis acie lamellarum late heteromorpha. Cystidiis et chrysocystidiis nullis, sed ad latera lamellarum interdum corpusculis filamentosis haud manifestis 22–23 × 2.8–3.3 μ hymenium percurrentibus sed sparsis.—Hyphis fibulatis, in tramate hymenophorali regulari haud parallelis, diametro variabili gaudentibus, brunneolis, subintertextis vel subparallelis in parte.—Epicute pilei pelliculam (ixocutem) efformante, ex hyphis hyalinis (paucis pigmento ochraceo incrustatis) gelatinosis, repentibus consistente; hyphis hypodermii latioribus, cutem efformantibus, haud subcellularibus, brunneis, sed pigmento incrustante ochraceo-brunneo tenuiter et parce disposito.—Ad fimum et ad terram fimo immixtam et interdum muscis tectam.—Typus a R. Singer (M 3506) in ARGENTINA, prov. Neuquén, Lago Correntoso, 12–III–1963 et in BAFC conservatus est.

This species is very close to *P. merdaria* but has the scanty veil and deeper pileus color of *P. merdicola* and *P. coprophila*, yet much smaller spores than the latter two species, and, besides, differs from *P. coprophila* in the absence of pleurocystidia.

Psilocybe mesospora Sing. spec. nov.—Pileo fusco-castaneo, hygrophano, statu sicco pallidiore, margine semper pallidiore quam centrum, pellucide striato per quartam partem radii, convexo, papilla fortiter evoluta ornato, subviscido, 13–14 mm lato; velo nullo viso.—Lamellis fusco-griseis, acie pallidis, latis, confertis, adnatis.—Stipite pallido, ad apicem pruinato, ceterum glabro, in siccis brunneolo, aequali, 36 × 1.5 mm cc.; velo in adultis nullo.—Contexto inodoro.—Sporis 12.5–15.5 × 7–8.5 μ, post tres annos brunneolo-lividis, quando in aqua visae sunt, in KOH atrobrunneo-fuscis vel olivaceo-fuscis, haud rhomboideis nec citriformibus, ellipsoideis, levibus, poro lato germinativo munitis, membrana complexa crassiuscula instructis.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis

marginato. Basidiis 26–32 × 9–10.5 μ, clavatis vel centro constrictis, hyalinis, (3)–4-sporis. Cheilocystidiis et pleurocystidiis aequalibus, 20–30 × 6–7 μ, apice 7–12 × 1–2 μ, ampullaceis, subacutis vel frequentius obtusatis, hyalinis, raro duobus apicibus praeditis.—Hyphis fibulatis, in tramate hymenophorali regulari dilute stramineis, haud gelatinosis, elongatis, tenuibus vel sublatiusculis.—Epicute pilei hyalina, gelatinosa; hypodermio fulvo-brunneo, pigmento haud incrustato.—In silvis Myrceugenellae apiculatae ad fimum sparsum et humum.—Typus a R. Singer (M 5128) in ARGENTINA, Neuquén, Quetrihué lectus et in BAFC conservatus.

PSILOCYBE CARBONARIA Sing., Mycopath. & Mycol. Appl. 26: 169. 1965.

Description and illustration see there.

PSILOCYBE DUNICOLA (Speg.) Sing., Mycopath. & Mycol. Appl. 34: 137. 1968.

Description see there.

PSILOCYBE CALLOSA (Fr. ex Fr.) Quél., Mém. Soc. Emul. Montbéliard 2e série 5: 257. 1872.

Pileus dirty fuliginous or dark gray with watery brownish center, viscid, over two thirds of radius transparently striate, dried smooth and light ochraceous, glabrous, conical but not acute, not papillate, about 9 mm broad.—Lamellae blackish gray to sepia-fuliginous, very broad, adnate, subdistant.—Stipe white or pallid, subglabrous, smooth, naked, dry, equal, about 80 × 1–1.5 mm; veil in mature specimens none.—Context in the faded pileus and the stipe whitish; odor none.—Spores 12–14.8–(16) × 7–8.5–(9) μ, ellipsoid to ovoid, not angular in any position, smooth, with broadly truncate germ pore, in water shortly after preparation brown (not or scarcely livid), in KOH fuliginous-fuscous with a chestnut tone in the endosporium, with complex thick wall, smooth, not pallescent in concentrated H_2SO_4.—Hymenium consisting of basidia and bordered by cheilocystidia. Basidia 20–28 × 11–12 μ, hyaline, 4-spored. Cheilocystidia crowded, 22–32 × 5–7 μ, ventricose below, with a central or somewhat eccentric equal or attenuate obtuse or more rarely subacute tip, rarely with broadened (to 2 μ) tip, generally apex 1.8–2 μ thick, all hyaline and thin-walled. Cystidia none.—Epicutis of pileus a broad gelatinous hyaline layer of very distant non-pigmented hyphae, 120–130 μ thick, clamp connections present.

Along the margin of the woods, on earth.

Material studied: CHILE: 5 km north of Los Conales (prov. Valdivia), 14–V–1967, Singer M 6901 (SGO).

This collection is referred to *P. callosa* with some doubt. The larger and not lilaceous-violet (in water) spores, the color of the pileus, its size, and the more gelatinized epicutis seem to show that this is not identical with the species called *P. callosa* by Huijsman (Persoonia 2: 91. 1961). Our specimens are much closer to *P. callosa* sensu Huijsman than they are to *P. semilanceata*, at least macroscopically. Since Quélet finds the spores to be 12–15 μ long, i.e. close to our own measurements, we believe that there is a possibility that our form exists in Europe also, and may have been the one originally described by Fries.

PSILOCYBE SEMILANCEATA (Fr. ex Secr.) Kummer, Führ. Pilzk. p. 71, 1871 (as *P. semilanceolata*).

Psilocybe semilanceata var. **semilanceata.**

This species, in its type form, occurs in Central and Southern Chile, and has spores 12.5–16 × 7.5–9 μ. Otherwise it is identical, in all its characters, with the following variety.

Psilocybe semilanceata var. **microspora** Sing. var. nov.—Sporis minoribus recedit. Typus a R. Singer (M 3236) in Chile collectus et in Herbario BAFC conservatus est.

For a full description and illustration see Mycopath. & Mycol. Appl. 26: 167. 1965.

The bluing form (var. *caerulescens*) has not been observed in South America.

The fact that we find the spores without a distinct violet color (only violet-brown, livid brown) in freshly dried material may suggest that the same color is observed in fresh spore prints, but since the collections of both the type variety and var. *microspora* agree in all other regards with the European material, we might suggest that in this case, in contrast to other species of Strophariaceae, the violet-livid color is destroyed immediately after drying. The same supposition may be valid for *P. callosa*, see above. In the case of both *P. semilanceata* and *P. callosa*, as they are observed in South America, additional observations on fresh spore prints are desirable.

Psilocybe flammuliformis Sing. spec. nov.—Pileo brunneolo, viscido, glabro, levi, convexo, interdum subumbonato, 20–25 mm cc. lato; velo marginali appendiculato, hyalino gelatinascente.—Lamellis primum pallidissime avellaneis, dein sordide flavo-brunneis, tenuissimis, confertis, adnatis.—Stipite subconcolori, sicco, glabro, subaequali, 35 × 4 mm cc.; velo tenui-membranaceo, albo, dein stipite denudato.—Contexto inodoro, miti.—Sporis 8.5–9.8 × 4.5–4.8 μ, ellipsoideis, levibus, intense castaneis

vel olivaceo-castaneis, poro germinativo munitis.—Hymenio e basidiis formatis et cheilocystidiis marginato. Basidiis 27–29 × 7–7.5 μ, tetrasporis. Cheilocystidiis ad aciem flavam numerosissimis, 20–30 × 5–7 μ, hyalinis vel subhyalinis et pigmento castaneo-fulvo incrustatis, elongatis et flexuosis, forma irregulari gaudentibus.—Hyphis fibulatis, in tramate hymenophorali regulari subparallelis, hyalinis, subcrasse tunicatis (membrana usque ad 1.3 μ crassa; diametro hypharum usque ad 20 μ).—Epicute pilei ex hyphis cutem efformantibus gelatinosis, pigmento castaneo-ochraceo incrustatis efformata; hypodermio haud subcellulari, pigmento incrustato, cutem formante.—Ad truncum Weinmanniae (?) in silva deusta ad basin arboris emortuae fasciculatim.—Typus a R. Singer (M 5523) in CHILE, Valdivia, Cordillera Pelada, 800 m alt., 6–V–1965 collectus et in Herbario BAFC conservatus est.

This is a rather tall species which has the appearance of a *Pholiota*. It was found only once, in a stand of *Nothofagus nitida*, mixed with *Saxegothaea, Weinmannia, Gevuina* on what appears to be either *Weinmannia* or *Gevuina*.

Psilocybe heterosticha (Fr.) Sing. comb. nov.

Agaricus furfuraceus var. *heterostichus* Fr., Epicr. p. 200. 1838.

Pileus brown to chestnut brown, or cinnamon brown, glabrous, smooth but with transparently striate margin over at least one third of the radius, viscid, hygrophanous at first campanulate, soon convex or flat, even with centrally depressed but subumbonate center, (5)–10–20 mm broad; veil at first flocconous on the pileus, but soon washed off.—Lamellae pale brownish, then deeper brown, dried light brown, narrow at the margin of the pileus, behind broad and ventricose, white fringed at the edges, subclose, broadly adnate or with decurrent tooth.—Stipe light brown above, deep bister below, or entirely chestnut brown, with glabrous apex, subequal, 20–55 × 1 mm; veil at first flocconous or fibrillose, white, then whitish or sordid pallid, soon disappearing.—Context inodorous.—Spores (5.8)–7–9.3 × (4.2)–4.5–4.8–(5) × 3.3–4.3 μ, lentiform, elongate-subrhomboid with mostly rounded angles in face view, more elliptical in side view, smooth, with distinct germ pore, melleous brownish or brown in water, ammonia and KOH, even when fresh.—Hymenium consisting of basidia, bordered by cheilocystidia. Basidia 20–28 × 6.5–8 μ, (2)–4-spored. Cheilocystidia very numerous and forming a broad sterile band, 29–54 × 4–7.5 μ, apex filamentous-attenuate and 2–3 μ broad, all hyaline, slightly to distinctly ventricose below, thin-walled. Cystidia none.—Hyphae with clamp connections, in the regular hymenophoral trama and the subhymenium brown from an incrusting

pigment, and not gelatinized.—Epicutis of pileus a broad gelatinized layer, below the hypodermium non-gelatinized and brown.

On wood of *Nothofagus* and various branches and stems, singly or in small groups.

Material studied: ARGENTINA: Rio Negro: Catedral, 1150 m alt., 25–IV–1965, Singer M 5179 (BAFC).—U.S.S.R.: Swanetia: Khä, August 1929, Singer (W).

This is very closely related to *P. crobula* but differs in the larger, relatively not very broad spores and the much more strongly striate pileus. (What we consider typical *P. crobula* has been described by us in Pap. Mich. Acad. 32: 141. 1948.) Our interpretation goes back to Beih. Botan. Centralbl. 48: 531. 1931 (as *Tubaria heterosticha*) which is based on Caucasian material collected on the stems of large ferns. Since Secretan no. 341 is possibly different and Britzelmayr's *A. heterostichus* appears to be the same as *Tubaria furfuracea,* while Fries's own descriptive data are extremely meager, it may in the end become necessary to describe this species, in our sense, as a new species.

P. omnium-sanctorum Sing., also lignicolous, should be compared.

Psilocybe omnium-sanctorum Sing. spec. nov.—Pileus chestnut, very deeply and intensely colored ("Agate" on margin, "Mohawk" in center or rather deep ochraceous tawny to reddish brown all over), glabrous, smooth, young not striate, viscid, later always distinctly transparently striate on the margin over 2 mm up to one half of the radius, hygrophanous, not striate and lighter colored when faded, semiglobate or pulvinate-convex when young, then convex and eventually somewhat flattened or even depressed in the center, but there at least subumbonate, or umbonate to papillate, 6–17 mm broad; veil in youth pallid, silky, appressed over the surface of a narrow or wide marginal zone, but soon disappearing, rarely consisting of minute floccons visible under a lens but even then easily washed off the viscid pileus.—Lamellae brown, then fuliginous-brown, fuscous, or sepia, subclose to subdistant and also very variable in breadth, typically moderately broad, but broadly adnate and often with slightly decurrent tooth.—Stipe light brown above, very deep fuscous-castaneous below, eventually entirely deep reddish brown or fuscous ("Mandalay", "Rembrandt", or deeper, M & P), with glabrous apex, slightly tapering upwards, or slightly broadened both at apex and at base, but also at times equal, 10–33 × 1–3 mm; veil in color near "Longbeach" M & P, not white, forming aside from the silky rim around the margin of the pileus disappears very soon a silky to fribillose, rarely flocculose covering layer which covers most of the stipe excepting the apex which may delimited by a silky line in early youth; basal mycelium

white.—Context concolorous with the surface, inodorous, mild.—Spores 6–8 × 3.8–5.2 × 3.5–5 μ, mostly 6,2–7.5 × 4.5–4 μ, apple-seed or lemon shaped when seen frontally, and elliptical when seen laterally, varying from not tentiform to lentiform in the same preparation, but generally less lentiform than the related species, brownish with deep sepia episporium, smooth, brownish melleous or dusky melleous in water after up to several months, not lilac-livid, with thick compex wall, with broad truncate germ pore.—Hymenium consisting of basidia, bordered by cheilocystidia, without pleurocystidia. Basidia 13–19 × 6–7 μ, 4-spored, hyaline. Cheilocystidia making the edge heteromorphous, 16–44 × 3.5–9.7 μ, apex 2–4 μ broad, very short to long (half the entire length), cylindric to ventricose below and short to long effilate into an attenuated or filiform-equal mostly obtuse (rarely subacute) apex, or else simply fusiform-ventricose with evenly attenuated tip, thin-walled, hyaline or partly (below) or entirely brownish, most hyaline or partly hyaline, but accompanied by mostly brownish broadly ventricose or ventricose-vesiculose bodies, at least in some specimens.—Hyphae with clamp connections, brownish in the regular hymenophoral trama, there more or less interwoven and partly very broad, with some pigment incrustation, not gelatinized, some becoming somewhat thick-walled.—Epicutis of pileus hyaline (but some hyphae with some brown incrusting pigment), a thin to thick layer of gelatinized cutis; hypodermium—a cutis of brown pigment-incrusted elements, much broader than the filamentous elements of the epicutis.—On rotten wood of dicotyledonous trees, on buried chips and on standing trees ascending to 1.50 m above ground, generally gregarious.

Material studied: CHILE: Llanquihue: Peulla, Lago Todos los Santos (hence the specific name), 22–III–1959, Singer M 1992 (LIL), typus.—Valdivia: Cordillera Pelada, west slope in *Eucryphia* woods, Singer M 5465 a, 7–V–1965 (BAFC). ARGENTINA: Rio Negro: Camino de la Laguna Frías al Paso de las Nubes, 19–XI–1964, Singer M 4039 (BAFC).—Laguna Frías, 18–XI–1964, Singer M 4020 (BAFC).—21–III–1963, Singer M 3101 (BAFC).—18–XI–1964, M 4032 (BAFC).—Neuquén: Lago Correntoso, 20–IV–1965, Singer M 5088 (BAFC).—Arroyo Frutillas, 28–IV–1964, Singer M 3637 (BAFC), doubtful.

This is another species of the *Crobula*-group or stirps which differs in the less developed veil, on an average less lentiform spores, more striate pileus, when compared with the descriptions given by Singer and Huijsman; also, the lamellae are often narrower and less crowded than in typical *P. crobula*, and the cheilocystidia appear to be more variable in size and shape.

Nevertheless, there are some collections which are atypical insofar as

they do not show one or the other of the distinguishing characters indicated above, such as M 3637 which has spores with the following characteristics: 6.7–7.5 × 5–5.3 × 3.3 μ, thus more decidedly lentiform in the great majority than usual in the other collections; M 5088 which had broad lamellae and a more flocculose veil on both pileus and stipe. For the time being we consider the aberrant forms to be extreme forms of the same species.—Diagnosis Latina: A P. crobula velo exiguo, margine striato differt. Typus Singer M 1992 (LIL).

Psilocybe valdiviensis Sing. spec. nov.—Pileo brunneo, levi, haud viscido, convexo, subumbonato, 15 mm cc. lato.—Lamellis brunneis, latis, mediocriter confertis, adnatis.—Stipite atrobrunneo, leniter appresse sericeo, pileo vix longiore, 1 mm lato, ad basin leniter incrassato (usque ad 2 mm); velo exiguo, fugaci.—Contexto inodoro.—Sporis 5.2–6.4 × 4–4.3 × 3.5–4 μ, late ellipticis frontaliter (haud rhomboideis vel citriformibus), ellipticis lateraliter, in vegetis in medio-aquoso melleis, intense ochraceo-brunneis in KOH, levibus, leniter lentiformibus, poro germinativo lato truncato praeditis.—Hymenio: Basidiis 12–21 × 5–7 μ, paucis bisporis, multis tetrasporis. Cheilocystidiis variabillimis, biformibus, 15–32 × 5.5–11 μ, subtus ventricosis, ad apicem attenuatis, raro in medio constrictis, plerumque ampullaceis et apice brevi et saepe lato aut tenui et frequentius elongato praeditis, hyalinis, obtusis; etiam adsunt cellulae marginales pseudoparaphysoides 8.5–20 × 7–10.5 μ ut in *P. chilensis* nec non in permultis speciebus Inocybis, vesiculosis, saepe pedicellatis, sat numerosis, interdum prope aciem revisis sed aliis pleurocystidiis absentibus. —Hyphis fibulatis, in tramate hymenophorali regulari haud parallelis, brunneis e pigmento incrustante.—Epicute pilei ex hyphis haud gelatinosis vel vix subgelatinosis, plerumque densis, hyalinis, nonnullis pigmento leniter incrustatis efformata et cutem constituente; hypodermio ex hyphis latioribus, fortiter pigmento incrustatis, brunneis, haud parallelis efformato sed haud subcellulari.—Ad truncum arboris solitario.—Typus a R. Singer (M 5473) in CHILE, Valdivia, Cordillera Pelada lectus et in Herbario BAFC conservatus est.

This characteristic species is rare; it was found only once in woods dominated by *Eucryphia* (without *Nothofagus*) at about 450 m altitude. It differs from other species with non-gelatinized epicutis in the lignicolous habitat and the cheilocystidia.

PSILOCYBE MONTANA (Pers. ex Fr.) Kummer, Führ. Pilzk. p. 71. 1871.

Pileus brown ("Alamo" to "rust sorolla" with "cattail" center, M & P), slightly or decidedly viscid when wet, hygrophanous, much paler when

faded, wet transparently striate over up to more than half the radius, sometimes very short sulcate, otherwise quite smooth, convex, obtuse, subumbonate or papillate, 5.5–12 mm broad; veil even in youth rarely visible, pileus naked in the state of maturity.—Lamellae light tan to pale umber-argillaceous when young, then tobacco brown, then deeper almost fuliginous, subclose, horizontal, very broad, broadly adnate, in some adnato-subdecurrent to decurrent.—Stipe subconcolorous with the pileus or deeper chestnut with paler apex, subglabrous or merely very slightly subfibrillose (except for the veil), equal or slightly subventricose or tapering upward, mostly subequal, 16–34 × 1–2.5 mm; veil brownish pallid, fibrillose-sericeous, fugaciously condensed in an apical zone but not forming an annulus, at first appearing as a cortina.—Context inodorous.

Spores 7–8.5 × 4.2–5.5 × 4–5 μ, ellipsoid to ovoid-ellipsoid, scarcely or slightly lentiform, smooth, with broad truncate germ pore, with rather thick complex wall, brownish-livid to violet-lilac in water when freshly collected, in KOH chestnut brown to olive-fuscous in KOH.—Hymenium consisting of basidia and bordered by cheilocystidia. Basidia 18–20 × 6.5–7.5 μ, 4-spored. Cheilocystidia (16–26(43) × 5–7.5–(9) μ, apex cylindric and obtuse, 10–17 × 2.3–4 μ, ampullaceous, hyaline, thin-walled. Cystidia none.—Hyphae with clamp connections, brownish hyaline to pale brownish, not gelatinized except in the epicutis of the pileus. Epicutis a thin to thick layer of filamentous, thin, strongly gelatinized hyphae running horizontally (ixocutis), some hyphae ascending or flexuous-spiralling; hypodermium not gelatinized, of broader elements, not subcellular.

Among all kinds of mosses (not *Sphagnum* in our region), especially Polytrichaceae, often directly on the living or dead moss thallus, in open woods, along forest paths, mostly gregarious, in South America frequently fruiting in the spring.

Material studied: CHILE: Llanquihue: Salto de Petrohué, 17–IX–1967, Singer M 7587 (SGO).—Ensenada, 17–IX–1967, Singer M 7566 (SGO).—Valdivia: Cuesta Santa Elvira, 11–IX–1967, Singer M 7347 (SGO).—Numerous European and North America collections.

We have given a full description in order to be precise about our interpretation of this species. This coincides with the concept of both Romagnesi and Orton.

PSILOCYBE ANGULATA (Pers.) Sing., Persoonia 2: 7. 1961.

Agaricus angulatus Batsch ex Pers., Mycol. Europ. 3: 155. 1828.

Pileus chestnut-fulvous to chestnut brown ("Mandalay" but less reddish, or "sierra", oldest uniformly "Congo" to "London smoke"), strongly hygrophanous and soon fading to pale avellaneous or dirty ocher (11–E–6 to "Lariat", M & P), but not viscid, at first not striate, later one third to

two fifths of radius transparently striate and mostly also slightly sulculate, campanulate or convex, then convex and eventually convex-applanate, with a small but distinct and rather constant umbo or papilla, 10–21 mm broad; veil in youngest specimens forming a 0.1 mm broad appendiculation which is white, often denticulate, or whitish and soon disappearing. — Lamellae light gray at first, later becoming almost concolorous with the pileus, broad to very broad, reaching 6 mm broad, subdistant to distant, adnate.—Stipe avellaneous ("Tuscan tan", M & P), with "auburn" base and the apex at times almost pallid, eventually somewhat paler than the pileus or concolorous with the pileus with paler or concolorous apex, equal, or, especially in youth, tapering upwards, 16–34 × 1–2.5 mm; veil consisting of appressed, rather inconspicuous pallid silky fibrils.—Context inodorous.

Spores 6.5–8.5 × 4.8–6.8 × 4–5 μ, mostly 7–8 × 5.2–5.8 × 4.2 μ, oval in frontal view, also often appearing slightly subrhombiform or citriform, some elliptical, in lateral view elliptical, violet brown to lilaceous-livid when fresh in water mounts, melleous in NH_4OH, deep brown to dusky olive in KOH, smooth, with a broadly truncate germ pore and thick compound wall.—Hymenium consisting of basidia and bordered by cheilocystidia, no cystidia. Basidia 16–22 × 5.7–7 μ, 4-spored. Cheilocystidia 10–36 × 4–9 μ, apex 5–18 × 1.8–3 μ, ampullaceous, obtuse, hyaline.—Hyphae with clamp connections, those of the regular hymenophoral trama pale brownish, not gelatinized.—Epicutis of pileus—a hyaline layer of non-gelatinized cutis, consisting of filamentous hyphae; hypodermium deep brown, more irregular, of often voluminous elements which are conspicuously incrusted by pigment.

On dead monocotyledonous plants and moss thalli, solitary or gregarious, mostly the latter, fruiting in fall.

Material studied: CHILE: Valdivia: Cordillera Pelada, 2 km from Mirador at 900 m alt. in a bog, 6–V–1967, Singer M 6733 (SGO).—West slope of Cordillera Pelada at 450 m alt., on road bank among low mosses, 4–V–1967, Singer M 6700 (SGO).—FRANCE: typus of *A. angulatus* (L).

Since no modern description of this species exists, at least not under this name, we provide one here. Among the species with dry pileus and violet spores, this one is easily recognizable by its habitat (*P. hyperella* = *P. xeroderma* growing on various fragments, mostly woody, in coniferous woods aside from having slightly smaller spores and more fusiform to subulate cheilocystidia with attenuate apex). It has been determined *P. physaloides*, but this latter species is characterized by close lamellae and viscidulous pileus.

Psilocybe ecbola (Fr.) Sing., comb. nov.

Agaricus (*Naucoria*) *inquilinus* var. *ecbolus* Fr., Epicr. p. 199, 1838.

It is not necessary to redescribe this common species since our material and notes coincide well with the data already published by a number of other authors and with my notes and specimens collected in Europe and Asia, all under the name of *Deconica inquilina* (Fr.) Romagnesi. We understand our species in the sense of Lange and Orton.

We prefer, however, the binomial *Psilocybe ecbola,* in part because we do not recognize the genus *Deconica* any more, and in part because the epithet *ecbola* is more specific and definite since Fries (Systema Myc. p. 264) gives a very unspecific description leaving ample room for diverse interpretations, and separated, himself, in Epicrisis p. 199, a graminicolous variety from a lignicolous type form, the former named *ecbola.* He thus performed himself the selection of a lectotype for *A. inquilinus,* and, whatever this was, it was not the graminicolous form, which he may have originally included.

Material studied: CHILE: Maule: Molco, 4–VIII–1967, Singer M 7226 (SGO).—Santiago: Macul, 4–IX–1967, Singer M 7342 (SGO).—ARGENTINA: Neuquén, Cerro Cortinario above Puerto Manzano, 26–IV–1964, Singer M 3567 (BAFC).—Villa Angostura, 18–IV–1965, Singer M 5034 (BAFC).—Lago Nahuel Huapí, Puerto Manzano, 5–IV–1963, Singer M 3283 (BAFC).—Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 7–V–1964, Singer M 3995 (BAFC).—URUGUAY: Maldonado, 27–V–1966, Singer B 4181 a (BAFC).—Many European collections.

Not all collections were from living or rotting grass roots and stems; some were on burned material in open places, possibly grasses (M 3995), and on old dung in burned over grassland (M 3567).

Psilocybe peladae Sing. spec. nov.—Pileo brunneo, viscido, levi, glabro, convexo dein applanato vel concavo, 18 mm cc. lato.—Lamellis griseis, confertis, latis, adnatis.—Stipite sordide ochraceo, glabro, nudo, 40 × 2 mm cc.; velo haud viso in adultis.—Contexto inodoro.—Sporis 9.2–10.5–(11) × 6–7.5 × 5–6.5 μ, rhombiformibus vel rotundatorhombicis frontaliter, sublentiformibus, lateraliter visis subamygdaliformibus vel ellipticis, depressione suprahilari praeditis, membrana crassa complexa instructis, poro germinativo lato truncato munitis, levibus, vegetis in medio aquoso sordide lilaceis, in NH_4OH fuscis, in KOH griseis.—Hymenio e basidiis et chrysocystidiis consistente et cheilocystidiis marginato. Basidiis 19.5–25 × 7–8 μ, tetrasporis. Cheilocystidiis 24–29 × 5.5–7 μ, ampullaceis, apice tertiam partem vel dimidiam longitudinis occupante, attenuatoque et acutis vel obtusis, hyalinis, tenui-tunicatis, interdum subulatis, aciem lamellarum heteromorphan rendientibus. Chrysocystidiis (13)–20–30 ×

10–12 μ, moderatim numerosis, tenui-tunicatis, contentu amorpho vel rhabdomorpho instructis, intus pallide aureis, membrana hyalina instructis, clavatis vel ovoideis.—Hyphis fibulatis, in tramate hymenophorali regulari subintertextis vel subparallelis, brunneolis sed pigmento haud incrustatis nec gelatinosis sed nonnumquam aliquantulum sinuosis.—Epicute pilei gelatinosa, hyalina, ex hyphis tenuibus (± 3 μ latis) filamentosis repentibus efformata; hypodermio ex elementis brunneolis, pigmento haud incrustatis, haud gelatinosis, admodum irregularibus nec parallelis, nonnullis breviusculis efformato, sed haud subcellulari.—Ad terram in silva mixta.—Typus a R. Singer (M 6782) 7–V–1967 in Chile, prov. Valdivia, Cordillera Pelada, loco Chivería denominato lectus et in SGO conservatus est.—*P. lazoi* et *P. alnetorum* affinis sed ab illa sporis maioribus, ab hac pileo strato gelatinoso tecto differt.

Psilocybe marthae Sing. spec. nov.—Pileo sordide olivaceo-fusco, fortiter hygrophano, e centro marginem versus dehydratione ochrascente, viscido, glabro, levi sed per tres quarta radii pellucide striato, umbone ferrugineo-brunneo exiguo ornato sed demum interdum subobtuso, conico-convexo, dein convexo-applanato, raro margine recurvato, 19–20 mm lato.—Lamellis griseis, subnigrescentibus, latis, adnatis, subconfertis, aciebus albidis.—Stipe pallido, sicco, nitente, cavo, subaequali vel basin versus attenuato, 42–52 × 1.5–2.5 mm; velo haud visco.—Contexto inodoro, sapore miti.—Sporis 8.5–10.3 × 6–7 × 5.5–6.2 μ haud vel vix lentiformibus, ellipsoideis, poro germinativo truncato lato praeditis, in KOH saturate castaneis vel brunneis, membrana complexa crassa munitis, interdum subolivaceo-tinctis, exosporio et endosporio subhyalinis, episporio bene pigmentato, gigasporis usque ad 11.2 × 7 μ frequenter formatis sed perpaucis.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis 19–23 × 6.5–9.5 μ, plerumque tetrasporis, perpaucis bisporis interdum praesentibus. Cheilocystidiis et cystidiis aequalibus, ventricosis, in appendiculum effilatum ampullaceo protractis, acutis vel obtusis, raro in centro constrictis, apice partem quartam vel dimidiam longitudinis occupante sed raro duplici-bifurcato, hyalinis vel subhyalinis, tenui-tunicatis.—Hyphis fibulatis.—Epicute pilei hyalina, fortiter gelatinosa, ex hyphis superficiei parallelis filamentosis efformata; hypodermio manifeste brunneolo, sed haud visibiliter pigmento incrustato cuius elementa saepe lata sunt sed haud subcellularia sed parallela vel subintertexta, cutem efformatia.—Ad terram locis umbrosis.—Typus a R. Singer et Martha Singer (hinc epitheton) in CHILE, prov. Valdivia, Cordillera Pelada in parte occidentali ad 450 m altitudinis 7–V–1967 lectus et in SGO conservatus est.

This species is amply characterized by the viscid pileus, the obsolete

veil, the size of the spores and their shape as well as the non-chrysocystidioid pleurocystidia and the habitat.

Psilocybe fuegiana (Horak) Sing. comb. nov.

Deconica fuegiana Horak, Darwiniana, 14: 369. 1967.

The type of this species (LPS) is a specimen determined *D. coprophila* by Spegazzini at Ushuaia, on earth, 18–I–1924. It has the appearance (dried) of an *Agrocybe*; the pileus is now yellowish, obtuse, glabrous; lamellae deep tobacco brown from spores, broad, adnato-decurrent; stipe cylindrical, appears solid, white mycelioid at base, whitish at apex, yellowish below, no veil visible. The dried pileus is 20–25 mm broad; stipe 40 × 2–3 mm.

Microscopical analysis: Spores 9.5–11.5 × (5)–7 μ, smooth, ocher yellow with olive hue, with broadly truncate germ pore; basidia about 19 × 7 μ, 4-spored; cheilocystidia and pleurocystidia similar, the latter ampullaceous, hyaline, 20–30 × 4.5–6 μ, apex 2.5 μ broad, subequal or attenuated to an obtuse tip, the former 19–26 × 9–12 μ clavate to subfusoid with subacute apex, thin-walled, hyaline.—Clamp connections are present[1]). Epicutis filamentous, not or scarcely gelatinized, hyaline.

Without these data, Horak's new species is, like most of the rest of those that Spegazzini wisely left unpublished, fully unrecognizable. However, on the basis of the above data, it is now believed that the following collection which we had planned to publish as a new species, is the same as *P. fuegiana*:

Pileus "Antique bronze" (M & P), fades to "Leghorn" or "nankeen" (M & P) with the center usually persistently "raw sienna" (M & P), hygrophanous, not viscid, conic to campanulate, later convex to applanate or concave, at first papillate to subumbonate, later with or without an umbo, 10–26 mm broad.—Lamellae "Antique gold" (M & P), subclose, broad, adnate.—Stipe at apex "desert" to "centennial br." (M & P), below "raw sienna", base "seal" (M & P), slightly appressed pallid-silky, equal, 27–48 × 1–2.5 mm; no veil seen except the silky covering of the stipe; basal mycelium white.—Context inodorous; taste mild or perhaps very slightly acrid.—Spores 9–12 × 5.5–7 × 6–7.5 μ, not visibly lentiform, with thick complex wall, smooth, with broadly truncate germ pore.—Hymenium consisting of basidia and cystidia which are not different from the numerous cheilocystidia which border the hymenium along the edges.

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1) They are absent according to Horak. In several cases where Horak annotated "clamps absent" we have found abundant clamp connections. For this very reason we do not think that his conclusions about the taxonomic value of this character here or anywhere else in agarics or other Basidiomycetes should be blindly accepted (cf. Nova Hedw. 8: 341, 1964, on *Crepidotus*).

Basidia 21–29 × 5.5–9 μ, 4-spored. Cystidia and cheilocystidia 17–30 × 4–9 μ, ventricose in middle or lower third, mostly in middle third and fusiform or subampullaceous, attenuated above and below, with the apex often finger-like and often two apices appearing, or the apex forked, subacute or obtuse, hyaline, thin-walled.—Hyphae with clamp connections. —Epicutis of pileus hyaline, inamyloid, not visibly gelatinized; above it what appears to be a velar layer which, in contrast to the epicutis and the hypodermium is not a cutis, also hyaline; below the hypodermium which consists of relatively thin but somewhat irregular hyphae, pale melleous in KOH, not or scarcely pigment-incrusted.

On *Austrocedrus*-debris in mixed woods of *Austrocedrus chilensis*.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 900 m alt., 22–IV–1964, Singer M 3398 (BAFC).

PSILOCYBE CHILENSIS Sing., in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 168. 1965.

Description see there.

Melanotus

MELANOTUS CASSIAECOLOR (Berk.) Sing., Sydowia 15: 70. 1961.

Pileus brown, glabrous or subglabrous, smooth, convex, obtuse, 8–10 mm broad.—Lamellae brown, with pallid edge, rather broad or broad, subclose, sinuate adnate or squarely adnate.—Stipe white and tomentose at first, then becoming brown and subglabrous, sublateral to strongly eccentric, minute and inconspicuous, often curved, 1–1.5 × 0.5–0.7 mm; veil none.—Context inodorous.

Spores 8–11 × 5.7–7.7 μ, not or scarcely lentiform, ellipsoid but in lateral view often slightly phaseoliform, with double but not extremely thick wall (a slightly developed hyaline exosporium becoming visible under a good immersion lens, episporium and endosporium well differenciated), smooth, with germ pore, light fuscous to melleous brown in KOH. —Hymenium consisting of basidia and bordered by cheilocystidia, no pleurocystidia. Basidia 23–30 × 9–10 μ, or shorter, constricted in the middle, hyaline, 4-spored. Cheilocystidia 21–22 × 7 μ, ampullaceous, apex thin (2–3.5 μ) and as long as the basal ventricose part or somewhat shorter, hyaline, the tip occasionally somewhat enlarged.—Hyphae with clamp connections; in the hymenophoral trama thin-walled and subgelatinous, filamentous, hyaline.—Epicutis of pileus a thin to medium gelatinized layer consisting of thin—(3)–4–(5) μ—hyaline hyphae; hypodermium of filamentous hyphae with thin to mostly thick (1 μ) wall with heavy brown pigment incrustation and therefore appearing more or less verruculose.

On wood, mostly monocotyledonous, often densely gregarious, fruiting mainly in March.

Material studied: CHILE: Llanquihue: Peulla, 20–III–1959, Singer M 1927 (SGO).—Valdivia: Between Niebla and Punucapa, 25–III–1959, Singer M 2067 (SGO).—TASMANIA: Leg. Archer (K), typus.

Our material is undoubtedly identical with that from Tasmania. This is another example of Austral-Antarctic-(South American) area disjunction.

Melanotus gayi (Pilát) Sing. comb. nov.

Crepidotus gayi Pilát, Trans. Brit. Myc. Soc. 33: 237. 1950.

Pileus gilvous, fading to whitish, dried often becoming brownish, finely tomentose, under a lens strongly tomentose, not viscid, smooth or eventually short sulcate convex with subreniform or lobed outline, 4–16 mm broad.—Lamellae fuscous-spadiceous, narrow to moderately broad, varying from crowded to subdistant, adnexed to adnate, with white edges.—Stipe quite white when fresh, very finely tomentose, equal, sometimes curved, 1.5–(3) × 0.6–0.8 mm, inconspicuous.—Context inodorous.

Spores 6.8–9.2 × 5.5–6.3 × 5–5.7 μ, short ellipsoid to ellipsoid, not or very slightly lentiform, smooth, with distinct germ pore, light fuscous brown, or fuscous brown in KOH or NH_4OH.—Hymenium consisting of basidia and bordered by cheilocystidia. Basidia about 19 × 7.7 μ, 4-spored. Cheilocystidia about 2.5–3 μ thick, filamentous or almost so.—Epicutis—a trichodermium, with clamped elongated hyphae.

On wood of *Nothofagus dombeyi, Alnus, Populus, Pirus, Acacia.*

Material studied: CHILE: O'Higgins: Rancagua, 1818, Bertero, 580 m alt. (F, P), typus.—ARGENTINA: Tucumán, Tafí del Valle, Quebradita del Mastil, 2300 m alt., 14–XII–1949, Singer T 768 (LIL).—Neuquén: Puerto Manzano, 900 m alt., 8–IV–1963, Singer M 3322 (BAFC).

Melanotus patagonicus Sing. spec. nov.—Pileo laete ochraceo-brunneo, hygrophano, dehydratatione colorem *Lactarii helvi* monstrante ("butterscotch" M & P), in humidis "Sudan br." vel "Kis kilim" tincto, levi, tomentoso, reniformi vel lobato, convexo, demum depresso, 6–17 mm lato.–Lamellis ochraceobrunneis vel castaneis (e.gr. "oak" vel "Sudan" br." M & P), latis (2.5 mm), subconfertis vel subdistantibus, interdum ventricosis, adnatis.—Stipite fusco, albo-sericeo, aequali vel apicem versus attenuato, brevi, saepe curvatulo, initio frequenter subcentrali, dein excentrico, haud laterali, 2.5–5 × 1–1.5 mm; velo nullo.—Contexto inodoro. —Sporis (6)–6.3–7.8 × 5–5.8 × 4.5–5 μ, vix leniter lentiformibus, levibus, ellipsoideis, poro germinativo lato praeditis, intense et sat obscure castaneis

(KOH).—Hymenio e basidiis cheilocystidiisque consistente. Basidiis 20–27 × 6.8–7.8 μ, 4-sporis. Cheilocystidiis biformibus: (1) polymorphis, minutis, 10–24 × 2.7–4.5 μ, irregularibus, membra terminalia hypharum subhymenii ex sibi constituentibus, e.gr. clavatis vel centro constrictis, rarius vesiculosis et appendiculatis (appendiculis e.gr. 5 × 1.8 μ), vel capitulatis (capitulo e.gr. 2–3.7 μ diam., constrictione 1.3–1.8 μ diam.), cylindraceis, etc., ex eis acies lamellarum pallida est; (2) 18–30 × 9.2–12.2 μ, vesiculosis vel vesiculoso-ventricosis, tenui-tunicatis.—Hyphis fibulatis, in tramate hymenophorali hyalinis, nonnullis autem pigmento ferrugineo-ochraceo incrustatis.—Epicute trichodermiali.—Ad ligna putrescentia in silvis mixtis.—Typus a R. Singer (M 3060) lectus et in BAFC conservatus est.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 17–III–1963, Singer M 3060 (BAFC), typus.—18–IV–1965, Singer M 5050 (BAFC).—Rio Negro: Santa María, on *Austrocedrus*-wood, 19–IV–1965, Singer M 5075 (BAFC).

Pholiota

Pholiota aurantioalbida Sing. spec. nov.—Pileo aurantiaco (11–H–9, M & P), marginem versus albido, glabro, viscido, obtuso, convexo, 28 mm cc. lato.—Lamellis griseis ("tanaura" M & P), mediocriter latis, sinuatis, confertis.—Stipite albo, ad basin subflavescente, glabro, levi, basin versus attenuato, 90 × 8 mm cc.; velo exiguo, in stipite subnullo, ad marginem pilei appendiculato sed sat fugaci.—Contexto albo, subamaro.—Sporis 5.8–7.2–(7.8) × 4–4.5–(5) μ, ellipticis, lateraliter leniter phaseoliformibus, melleo-brunneolis, levibus.—Hymenio e basidiis tetrasporis et chrysocystidiis consistente, his 30–45 × 9.5–11.3 μ, clavatis vel ovoideo-mucronatis, tenuiter incrustatis tegumento hyalino resinaceo aut fulvo, in KOH contentum amorphum aureo-flavum monstrantibus, numerosis et conspicuis, nonnullis vasculis chryseis communicantibus.—Hyphis fibulatis.—Epicute pilei flava vel hyalina, tenui, gelatinosa. Hypodermio haud gelatinoso, castaneo-rufo, ex hyphis filamentosis cutem efformantibus consistente.—Ad lignum emortuum in silva nothofaginea, probabiliter *Nothofagi dombeyi*.—Typus a R. Singer (M 3127) in ARGENTINA: Rio Negro: Laguna Frías, 21–III–1963 lectus et in BAFC conservatus est.

This species is of the group of *P. astragalina* and *calendulina*.

PHOLIOTA PRIVIGNA (Speg.) Sing., Sydowia 7: 218–219, 1953 ex Dennis, Kew Bull. 15: 139. 1961.

Pileus pale or dull yellow ochraceous with more brownish center (10–E–6, respectively 11–H–7), or unicolorously between date brown and

ochraceous brown, glabrous or with inconspicuous, small appressed fibrils which form fugacious subsquamulose dots, viscid, smooth or up to one third of the radius sulculate, convex, then often depressed around a subumbonate or umbonate center, or subapplanate, 13–27 mm broad; veil dirty pallid, leaving some fibrils on the margin which later disappear.—Lamellae yellowish, soon becoming grayish stramineous or argillaceous, later vinaceous buff to fuscous brown, broad, often ventricose, close to distant, mostly subclose, adnate, often with a slight tooth. Spore print dull brown as in the majority of the Pholiotas.—Stipe at first with almost white or yellowish apex and brown ("hazel" M & P) base, later all brown with darker base, glabrous and smooth except for the veil remnants, equal or slightly and gradually tapering upwards, 17–44 × 1–3 mm; veil silky or fibrillose, pallid to dirty pallid, connecting the margin with the apex of the stipe where it leaves a circular narrow silky-fibrillose belt which disappears very soon, not forming an annulus.—Context without a characteristic odor or taste.

Spores 8.5–13 × 5.7–8.2 μ, mostly 9–10 × 6–6.5 μ, ellipsoid to somewhat ovoid, with or without a suprahilar depression, or applanation, but never reniform, smooth, with germ pore, but this often narrow and not truncate, in other spores, independently of size, with truncate pore, brownish ochraceous to ochraceous brown, with hyaline endo- and exosporium (the latter very thin and inconspicuous), and a rather deep brown episporium.—Hymenium consisting of basidia, cystidia, and mostly chrysocystidia, the cystidia of the metuloid type and often with chrysocystidioid enclosure. Basidia 23–27 × 7–9.5 μ, 4-spored, hyaline to lemon yellow. Cystidia thin-walled throughout, vesiculose or ventricose, mucronate or not, often with a golden thin incrustation, without amorphous yellow contents, more rarely with a short to long attenuate or cylindrical apical prolongation which may even be slightly subcapitate, sometimes with evenly dissolved yellow pigment in the interior which is secondary since it derives from intercellular pigment dissolved by the medium (KOH), (23)–32–79 × (7)–14–25 μ. Cheilocystidia similar, but mostly ventricose and obtuse, hyaline or yellowish, thin-walled, very numerous, 25–45 × 9–15 μ. Metuloids like the cystidia as described above, but with thick (up to 1.5 or even 2.8 μ) wall, their relative abundance compared with the thin-walled cystidia being rather variable, but in fully mature specimens always some present. Chrysocystidia 19–45–(57) × (7)–10–22 μ, thin-walled, ventricose-subvesiculose or even subglobose, often mucronate, with oily or amorphous yellow inside-bodies (KOH, NH_4OH), but always some present without these, and generally, in some collections, chrysocystidia of the typical kind very rare or perhaps absent, but then usually either the cystidia with thin walls, or the metuloids or both at the

same time functioning as chrysocystidia, i.e. provided with yellow oily or amorphous or densely granular internal bodies in KOH.—Hyphae with clamp connections, in the regular hymenophoral trama hyaline, subhyaline, or yellowish, without pigment incrustations, subparallel in the mediostratum, slightly to distinctly gelatinized in the hymenopodial layer where the hyphae are less parallel, subhymenium also often gelatinized.—Epicutis of pileus gelatinous, except in the superimposed fibrils (where present), and sometimes a non-gelatinous lower layer, with more or less incrusting pigment here as well as in the non-gelatinized hypodermium which is not subcellular but shows much broader elements than the epicutis (4–13 μ diam.).

On dead wood, mostly of *Fitzroya*, but also of other trees, sometimes seemingly on the ground among mosses, but perhaps over very rotten buried wood, twice seen on acid soil among Sphagna, fruiting in late fall, in Northern South America in July.

Material studied: CHILE: Valdivia: Cordillera Pelada, Mirador, 1000 m alt., 5–V–1967, Singer M 6718 (SGO).—5–V–1965, Singer M 5519 (BAFC).—9–V–1965, Singer M 5652 (BAFC).—ARGENTINA: Isla de los Estados: Typus (LPS).—COLOMBIA: Boyacá: between Ramiriquí and Rondón, 2800 m alt., 30–VII–1960, Singer B 3629 (SGO).—VENEZUELA: Mérida: Sierra de Santo Domingo, Laguna Negra, 27–VII–1958, Dennis & Buza 1737 (LIL, K).

This species is very variable in all respects, but easily recognizable by the spore size and the chrysocystidioid contents in some of the hymenial elements. It is limited in its distribution to the high mountains of the Andes, reaching lower levels only in the extreme south. It is most closely related to *P. megalosperma* Sing. which has the same spores and similar cystidia but lacks the chrysocystidioid enclosures and metuloids.

Pholiota marthae Sing. spec. nov.—Pileo pallide alutaceo vel ochraceo-brunneo, levi, glabro, haud viscido, breviter (3 mm cc.) striato, glabro, convexo, umbilico praedito vel destituto, 24–25 mm alto.—Lamellis brunneolo-ochraceo-alutaceis vel brunneis, latis, subdistantibus, sinuato-adnexis.—Stipite sordide flavido-stramineo, magis brunneo basin versus, demum brunneo ad basin, levi et glabro, frequentissime ad apicem incrassato et ad basin attenuato, 35–40 × 3.5–4.5 mm; velo pallido, initio zonam fibrillosam tenuem perfugacem apicalem formante, sed in parte inferiore nullo aut fibrillis sparsis consistente, in maturis saepe subnullo.—Contexto flavido-pallido, inodoro.—Sporis 9.5–13–(15) × 5–7–(8) μ, ellipsoideis, oblongis, ovoideis, ad latus interius interdum leniter depressis, membrana complexa (duplici) levi et poro germinativo interdum truncato munitis, dilute (ochraceo-)brunneolis, levibus.—Hymenio e basidiis,

cystidiis crasse tunicatis et chrysocystidiis efformato cheilocystidiis marginato. Basidiis 26 × 7–8.5 μ, (3)–4-sporis. Metuloidibus 61–82 × 10–17 μ, crasse tunicatis (0.8–2 μ) apice excepto, ventricosis et in apicem attenuatum, interdum constrictum acutum vel obtusum effilatis, membrana hyalina vel flavidula haud incrustata munitis, intus homogeneis. Chrysocystidiis haud raris (sed magis sparsis quam metuloides), 30 × 15 μ cc., mucronatis, rarius haud mucronatis, corpusculo chromeo-luteo (KOH) rotundo instructis. Cheilocystidiis metuloidibus simillimis sed frequentius tenui-tunicatis et minoribus.—Hyphis fibulatis, in tramate hymenophorali regulari filiformibus, cum subhymenio haud gelatinosis.—Epicute pilei cutem repraesentante, haud gelatinosa, ex hyphis filamentosis pigmento fulvo incrustatis efformata, rarius in parte superficiali una hypha subgelatinisata observata quae in adultis delavatur. Hypodermio ex hyphis cutem efformantibus sed latioribus interdum breviusculis, fortiter pigmentatis efformato.—Ad plantas (Umbelliferas praecipue) locorum uliginosorum vegetationem duram efformantes, in turfosis, autumno.—Typus a R. Singer et Martha Singer (M 6734) in CHILE: Valdivia, Mirador, 900 m altitudinis, 6–V–1967 lectus et in SGO conservatus est.—*P. privignae* comparabilis, sed pileo haud viscoso, epicute haud gelatinosa distinguitur.

PHOLIOTA MONTANA Sing. in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 169. 1965.
Description see there.

PHOLIOTA FROWARDII (Speg.) Horak, Darwiniana 14: 368. 1967.

Pileus watery brownish ochraceous when wet, often more melleous on margin or more reddish brown or fulvous in the center, dried in the center "Alamo" (M & P) with gradually but considerably paler margin, viscidulous, smooth, glabrous, naked, convex, then flat, subumbonate, rarely somewhat umbilicate, 30–31 (according to type specimen to 70) mm broad.—Lamellae yellowish, then brown, broad or moderately broad, with entire edge, subclose or close, sinuate-adnate to adnate, or with a slight decurrent tooth.—Stipe pale melleous, evenly colored or slightly more brown below, glabrous or subglabrous, hollow, not radicant, slightly tapering upward, 46–48 × 4–5.5 mm (according to type description reaching up to 120 × 8 mm); veil in mature specimen, none.—Context pallid to pale melleous, in the stipe often more yellowish, especially in the cortex, unchanging, brown underneath the cuticle of the pileus, fragile, in the stipe fibrous, odor not remarkable.

Spores 5–8 × 3.5–4.8 μ, exceptionally reaching up to 9 × 5 μ, thick-walled with a broad endosporium, melleous-ochraceous-brownish when

seen fresh in water, deep brown and almost spadiceous in the episporium (KOH) and with a rufous-badious line along the endosporium, as often seen in the Strophariodeae, ellipsoid, never reniform, rarely extremely slightly lentiform, sometimes rather short ellipsoid, with a broad, truncate germ pore, smooth.—Basidia 11–22.5 × 5.5–6.5 μ, 4-spored, often constricted in the middle, hyaline to bright yellow. Chrysocystidia on edges and sides of the lamellae, 15–65 × 6–12 μ, either with the typical shape of chrysocystidia (clavate to ventricose with a mucro), or more elongated and ventricose and obtuse or with subcapitate or subclaviculate apical swelling and constricted below it (about 4.5 μ diam.), swelling, where present (6–7 μ across), some scarcely projecting beyond the basidia, other strongly projecting, some few with up to three short apical appendages, rarely forked, most with a yellow (KOH) amorphous enclosure, few without it (transition to ordinary cystidia), thin-walled, but some of them with a broad resinous coating incrusting the walls and making them appear thickened, but never metuloid, on edges (cheilocystidia) as on sides, but on edges more polymorphic and there often without the yellow internal body, not making the edges heteromorphous, but intermixed with the basidioles.—Hyphae with clamp connections, in the pileus subhyaline or at any rate less pigmented than in the hypodermium, radially arranged; in the regular hymenophoral trama yellowish hyaline and parallel to subparallel with each other, 7–15 μ broad, with 0.5–1.5 μ thick wall, not gelatinized but in the hymenopodium where the hyphae are clearly gelatinized, in the stipe interior clearly subparallel, hyaline or subhyaline and not gelatinized, in the cortex of the stipe yellow, partly thick-walled (1 μ), appressed and subparallel, but the thinner thin-walled hyphae often wavy-sinuous in KOH and emitting occasional bunches of short ascendant elements in certain places (subgelatinous veil remnants?), but not forming a gelatinous layer in form of a pellicle and remaining agglomerated in strands even after boiling in KOH.—Epicutis of pileus a thin but distinct ixocutis about 15 μ thick, gelatinous. Hypodermium abruptly deep brown from a membrana pigment, subcellular as in many Naematolomas, with rather thick walls.

Among fallen leaves of *Nothofagus*, *Aextoxicum* and other frondose trees, fruiting late in fall and early in spring.

Material studied: CHILE: Voces Bay, May 1882, Spegazzini, fragments only (LPS), typus.—Valdivia: Cayumapu, 11–XI–1967, Singer M 7761 (SGO).

Although we have not seen specimens as large as Spegazzini's we are fully convinced of the identity of our material with the type which we have carefully compared. This is quite different from *P. subflammans* because of the spore characters, particularly the constant broadly truncate

germ pore. We have not seen the scattered brown squamules which are said to be present on some of the original specimens at the lower portion of the stipe.

The microscopical characters, particularly the dark color of the episporium and the broad germ pore, might suggest that this species is a representative of the Strophariodeae rather than the Pholiotideae. If so, it would fit best in *Naematoloma*, as we have said when first studying the type, cf. Lilloa 23: 213, 217, 1951. However, after having collected living material, we are rather inclined to consider this a *Pholiota*, in the first place because of the fact that Spegazzini classified it as *Flammula*, and describes the spores of the then freshly dried material, and probably seen in water mounts, as pale ferruginous, in the second place, because the species is not closely related to any known *Naematoloma* or, for that matter, any Strophariodeae, but appears to be rather related to *P. subflammans* with which it has been confused. Also, in the course of our studies on South American Strophariaceae, we have met with certain other species which have equally strongly pigmented spores with equally strong germ pore which are undoubtedly not congeneric with any strophariod genus. There are, indeed, transitional species at least as far as the current diagnostic characters of the various strophariaceous genera are concerned, cf. Agaricales in modern Taxonomy, 1st ed. p. 500, 2nd ed. p. 536, 538.

PHOLIOTA SUBFLAMMANS (Speg.) Sacc. Syll. F. 9: 91. 1891.

Description see Lilloa 25: 497. 1952. This description may be supplemented by the data obtained from numerous additional collections:

The pileus is 5–39 mm broad, either obtuse, or subumbonate or umbonate. When the scales are washed off, it is often difficult to distinguish this species from other similar ones like *P. spumosa*. The squarrulose covering of the stipe is much more persistent. The stipe is sometimes as small as 11 × 1 mm. The odor may at times be nil; the taste is mild but somewhat disagreeable.

The spores are constantly small, reaching as maximum size 7.5 × 4.8 μ; their color is melleous ochraceous or ochraceous brownish (KOH); the germ pore is present and rather distinct in most spores, but not broadly truncate. The chrysocystidia (erroneously referred to as cheilocystidia in the description cited above) are constantly present. The cheilocystidia are 15–36 × 5.5–8.2 μ, hyaline or yellowish and sometimes incrusted by a succineous-rusty pigment. The hyphae of the hymenopodium are gelatinized and less parallel than those of the mediostratum. There is always a gelatinized zone above the hypodermium and this explains why the scales are so easily washed off by the rain.

The species is found on the ground in forests as well as on the trunks of trees such as *Salix humboldtiana, Nothofagus dombeyi* and *N. pumilio, Berberis ilicifolia,* Myrtaceae. It is much more widely distributed than was originally anticipated.

Material studied: CHILE: Voces Bay, Spegazzini 36 (fragments only, but showing spores and chrysocystidia as described) autumn, (LSP), typus. —Llanquihue: Peulla, 22–III–1959, Singer M 1979 (LIL).—10 km north of Colaco, 9–V–1967, Singer M 6813 (SGO).—Valdivia: Cordillera Pelada, west slope in *Eucryphia*-woods, at 400–420 m alt., 7–V–1967, Singer M 5566 (SGO).—Valparaiso: Quintero, in myrtaceous woods, 27–VI–1967, Singer M 7014 (SGO).—ARGENTINA: Tierra del Fuego, February 1950, Estancia Nueva Argentina, Singer M 180, M 307, M 307 a (LIL).—Rio Negro: Laguna Frías, 18–XI–1964 (spring), Singer M 4043 (BAFC). —Neuquén: Los Cántaros, 23–III–1963, Singer M 3142 (BAFC).—20–XI–1964, Singer M 4057 (BAFC).—Puerto Manzano, 18–IV–1965, Singer M 5045 (BAFC).—Buenos Aires: Punta Lara, 9–VI–1949, Singer S 122, S 122 a (LIL), then erroneously determined as *P. pseudofascicularis* Speg.—San Isidro, 19–VI–1965, Singer S 542 (BAFC).—URUGUAY: Montevideo, Prado, June 1918, Felippone 1528 (LPS).

This is closely related to *P. digilioi,* the subtropical and tropical counterpart of *P. subflammans,* and apparently also to *P. terrestris* Overholts, *P. carbonicola* A. H. Smith, and *P. frowardii* (Speg.) Horak, see above.

PHOLIOTA AURIVELLA (Batsch ex Fr.) Kummer, Führ. Pilzk. p. 83, 1871.

The specimens from South Chile are somewhat intermediate between var. *aurivella* and var. *squarrosipes* Sing. For this reason, we describe them below:

Pileus rusty fulvous brown, with rather appressed broad scales imbedded in the gluten of the pellicle, convex, umbonate, over 100 mm broad.—Lamellae sordid gray, then brown, rather broad, close, sinuate.—Stipe light yellow to brown, squarrose in low portion, glabrous above, slightly tapering upwards, not bulbous at base, about as long as pileus diameter, 10–15 mm broad. Veil annuliform, formed by the squarrose particles, not membranous nor distant-flaring.—Context yellowish, inodorous.

Spores 7.5–8.5 × 5 μ, most frequently ellipsoid, but also some ovoid to cylindric ones seen, in profile some very slightly phaseoliform, smooth, with distinct germ pore, golden melleous brown.—Hymenium: Basidia around 23 × 6.5 μ, with constriction 4-spored. Cheilocystidia 17–40 × 6–12 μ, varying between clavate and ampullaceous, ochraceous. Chryso-

cystidia e.gr. 17 × 9 μ, vesiculose, often with a very small mucro, with bright yellow amorphous internal body (KOH).—Hyphae with clamp connections.—Epicutis of pileus gelatinized.

On the dead trunk of *Nothofagus nitida.*

Material studied: CHILE: Llanquihue: 15 km north of Puerto Pargua, 9–V–1967 (SGO).

Similar and obviously conspecific material has been seen in northern (subtropical) Argentina, in the high mountains of Venezuela, in North America, Europe and Asia.

This is the only representative in Southern South America of subgenus *Pholiota,* so common in Europe, North America and Asia.

Pholiota ascophora (Peck) comb. nov.

Agaricus ascophorus Peck, Ann. Rep. N.Y. State Mus. 50: 138. 1897.
Flammula highlandensis (Peck) Peck, Ann. Rep. N.Y. St. Mus. 50: 138. 1897 sensu Kauffm. Amer. J. Bot. 13: 22. 1926, non Peck.

Pileus ochraceous brown ("chipmonk") with deep olive melleous ("syrup" M & P) or pale and dull brownish yellow margin which is incurved at first transparently striate in thinner adult specimens, subviscid to viscid, glabrous, smooth, hemispheric to convex, later becoming applanate, some with a low umbo, 13–28 mm broad.—Lamellae at first almost pallid, then melleous brown ("fox" M & P) with fuscous ("clove" M & P) shades, more rarely with a slight yellow tinge in the early stages, moderately broad to broad, adnate, close.—Stipe at first yellowish, then becoming pale olive melleous ("powdered gold" M & P) with more brownish ("Antique bronze" M & P) base, eventually often sordid brown all over, fibrillose and floccose from whitish or pale yellow floccons which, as such, are not persistent and stipe therefore often found naked and merely slightly appressedly fibrillose, the apex always naked, variable in shape, varying from tapering downwards to equal, sometimes constricted in the middle portion or slightl ytapering upwards, stuffed, then hollow, 25–60 × 1–5 mm; veil pallid to pale yellowish, forming a fugacious annulus in most specimens where the covering of the stipe ends, near the apex, but most adult specimens encountered exannulate, also on margin of young pileus some occasional velar fibrils present.—Context whitish, often tinged yellow, odor none; taste mild.

Spores (6)–6.5–9 × 3.5–5 μ, mostly around 7–7.8 × 4.2 μ, extremely versiform, mostly ovoid to ellipsoid or cylindric, in profile mostly distinctly phaseoliform, with an indistinct to distinct apical germ pore, but never truncate, smooth, melleous-ochraceous.—Basidia 17–22 × 6–7.5 μ, clavate or constricted, 4-spored. Cheilocystidia (15)28–37 × (5)–8–10–(11.5) μ, pale brownish or yellowish-stramineous, clavate or ventri-

cose, in the latter case with a slight constriction just above the middle, crowded and making the edge heteromorphous. Chrysocystidia 17–24 × 7.5–8.5 μ i.e. relatively small, often incrusted by rusty pigment, with a roundish internal yellowish (KOH) body, ventricose or cylindric-clavate. —Hyphae with clamp connections.—Epicutis a thin (15–25 μ diam.) layer of pellicle consisting of horizontal hyaline to yellowish filamentous hyphae which are imbedded in a gelatinous mass; hypodermium not subcellular, with brown incrusting pigment, not gelatinized.

On sandy soil or wet ground where generally some carbonized particles can be found, or on burned-over bark of tree trunks, solitary or more frequently densely gregarious to cespitose-fascicular.

Material studied: CHILE: Santiago: Cerro Robles, 19–VI–1967, Singer M 6968 (SGO).—ARGENTINA: Tucumán: Los Sosas, 1–I–1951, Singer T 1087 (LIL).—U.S.A.: New York: Highlands Falls, Peck (NYS), typus.

This species has been defined and described (as *F. carbonaria* var.) by C. H. Kauffman, but his description in The Agaricaceae of Michigan is obviously a mixed one; cf. Am. J. Bot. 13: 22. 1926.

It is not a typically Southern South American species since it has never been found in the provinces of the South of Chile or Argentina, yet it enters the relict forests of *Nothofagus* and has also been observed in the myrtaceous forests in Central Chile.

Pholiota novembris Sing. spec. nov.—Pileus fulvous-cinnamon-ochraceous to ochraceous brown (e.gr. "Pekinese" with or without "Maccaroon" striate on the margin), at first often light yellow all over, later only on margin or not yellow at all but pale gilvous to olive on extreme margin, or clay color in marginal zone, or merely paler between the striae, glabrous, glutinous, when mature short (2 mm) slightly transparently striate to long (over one third of radius) transparently striate and then often short sulculate to short-furrowed, otherwise smooth, conic-convex or campanulate, then convex, eventually with depressed center or applanate, at times concave all over, obtuse or subumbonate, more rarely umbonate 13–42 mm broad; veil sordid-hyaline, glutinous, appendiculate, evanescent.—Lamellae light pearl gray to gray (e.gr. "fallow" M & P), eventually brownish gray, with pallid edges, subclose, very broad or broad, broadly adnexed, rounded-adnex, or adnate, eventually somewhat separating from apex of stipe. Spore print fresh "cochin" M & P, i.e. fuscous-brown, dried (dehydrated) nearer "mummy" M & P.—Stipe pallid or stramineous-pallid, the apex white and dry, otherwise pallescent or yellow and glutinous, smooth, glabrous, but apex often pruinate, equal, tubulose, 20–47 × 2.5–4 mm; veil pallid or sordid hyaline, glutinous,

forming a completely glutinous annulus at the apex which is narrow but rather persistent.—Context subconcolorous with surface in the stipe, and not or scarcely paler or darker in the pileus; odor raphanaceous, but often very weak.—Spores 9–12 × 5–6.5 μ, oblong to ellipsoid, without suprahilar applanation or depression, only exceptionally with a very slight depression in the middle of the inner side, with a broad truncate germ pore, smooth, ochraceous brownish without chestnut or olive shades in KOH.—Hymenium: Basidia 21–31 × 6–7.8 μ, ventricose to clavate and often in the middle constricted, 4-spored. Cheilocystidia 34–55 × 9–20 μ, mostly 36–40 × 10–14 μ, ventricose below, tapering to a subacute to acute tip, hyaline to pale ochracebus, or all hyaline, essentially thin-walled, rarely with walls up to 0.8 μ thick, making the edge heteromorphous. Metuloids on the sides and a few on the edges of the lamellae, thick-walled (wall 0.8–2.3 μ), 51–79 × (7)–10–22 μ, numerous, fusoid-ventricose with effilate subacute tip, much like the cheilocystidia in shape, wall at the apex often somewhat thinner, and in the frequently rather elongated pedicel thin. Chrysocystidia scarce, often almost absent. 31–39 × 9–15 μ, filled almost entirely by a bright golden mass, ventricose and usually mucronate with a short narrow mucro, generally thin-walled, rarely with walls partially up to 0.8 μ thick, very rarely one observes a few metuloids which have a similar golden internal body when seen in KOH.—Hyphae with clamp connections, in the regular hymenophoral trama parallel, thin, thin-walled, not gelatinized.—Epicutis of pileus gelatinous, an ixo-cutis.—On the earth among mosses, and on rotting wood, on humus etc., often densely gregarious, spring-fruiting.

Material studied: ARGENTINA: Rio Negro: Path from Laguna Frías to the Paso de las Nubes, 19–XI–1954 (BAFC), typus.—18–XI–1965, Singer M 4028 (BAFC).—M 4029 (BAFC).—Neuquén: Camino a los Cántaros, 10–XI–1966, Singer M 6043 (BAFC).—Los Cántaros, 10–XI–1966, Singer M 6053 (BAFC).

Diagnosis Latina: Pileo, stipite, velo glutinosis; sporis 9–12 × 5–6.5 μ; cheilocystidiis et metuloidibus et plerumque chrysocystidiis praesentibus. —Ad terram, humum et lignum in Argentina; vernalis.—Typus a R. Singer (M 4054) lectus et in BAFC conservatus est.

This species is characterized by the glutinous pileus, stipe, and veil, the presence of metuloids and chrysocystidia—although the latter may be extremely scarce and might then easily be overlooked—and the spore size. The fructification in spring also appears to be characteristic.

Pholiota myxacioides Sing. spec. nov.—Pileo cinnamomeo vel rubido-brunneo in centro (e. gr. "russet"), margine grisello ("lark" M & P) vel sordide pallido vel flavescente, estriato vel per tres mm marginales tantum

sulcato, ceterum levi, glutinoso, glabro, convexo, dein applanato, plerumque umbonato, 20–35 mm lato.—Lamellis flavidis dein griseis ("prairie" M & P) vel argillaceis, demum subferrugineo-brunneis, acie flavis, subserrulatis, latiusculis vel latis, confertis vel subdistantibus, interdum ventricosis, adnatis vel sinuato-adnatis.—Stipite dilute flavo, flavo-albido, vel albido (e. gr. "margarite" vel 9–D–1, M & P), ad apicem sicco, ceterum tecto glutine, glabro, levi, subaequali vel leniter apicem versus attenuato, 40–110 × 2.5–4.5 mm; velo generatim, haud vel vix annuliformi, fibrilloso, externe subglutinoso.—Contexto flavido vel flavido-albo, odore nullo vel benzolico; sapore miti.—Sporis 8–12–(13) × 4.5–6 μ, ellipsoideis vel oblongo-subfusoideis, levibus, depressione suprahilari destitutis, poro germinativo apicali manifesto sed haud vel paullum truncato munitis, dilute ochraceo-brunneis (KOH), membrana duplici instructis.—Hymenio e basidiis et chrysocystidiis consistente et cheilocystidiis marginato. Basidiis 18–28 × 6–8 μ, hyalinis vel flavidis, clavatis, tetrasporis. Cheilocystidiis versiformibus, haud numerosis, hyalinis vel subflavidulis, cylindraceis vel basidiomorphis. Metuloidibus nullis. Chrysocystidiis numerosis, 29–55 × 11.5–18 μ, late ventricosis vel clavatis vel subampullaceis, saepe tenui-mucronatis, pedicellatis (pedicello 2–15 μ longo), corpusculo interno amporpho (KOH) nec non interdum incrustatione aureo-brunnea instructis, obtusis vel subacutis, rarissime neque ampullaceis neque mucronatis, tenui-tunicatis, rarius nonnullis membrana leniter incrassata (usque 1 μ) munitis. Cystidiolis in nonnullis exemplaribus perpaucis, hyalinis, ampullaceo-subcapitatis.—Hyphis fibulatis, in tramate hymenophorali regulari citrinis.—Epicute pilei ex hyphis filamentosis manifeste gelatinosis repentibus efformata. Strato externo stipitis simillime constructo.—Ad terram et humum ligniferum, autumno.—Typus a R. Singer (M 5707) collectus et in BAFC conservatus est.

Material studied: CHILE: Llanquihue: 2 km west of Puerto Pargua, 9–V–1967, Singer M 6824 (SGO).—Valdivia: Hueycolla, 4–V–1967, Singer M 6722 (SGO).—Chivería (Cordillera Pelada, east slope), 10–V–1965 (BAFC), typus.

This differs from the preceding species in the presence of numerous chrysocystidia, the absence of metuloids, the poorly or not developed annulus, autumnal fruiting. It is very close to *P. majalis* Sing. from which it differs in the absence of metuloids and larger pileus. *P. myxacioides* has, as suggested by the epithet, the habitus of a *Cortinarius* subgenus *Myxacium.*

Pholiota majalis Sing. spec. nov.—Pileo brunneo, glutinoso, ad marginem pallidiorem pellucide striato per tertiam partem radii, ceterum levi,

glabro, campanulato, obtuso, 12 mm lato et 8 mm cc. alto.—Lamellis argillaceo-griseis, dein brunneis, latis, subconfertis, adnatis.—Stipite albo, glutinoso, glabro, nudo, levi, aequali sed ad basin acuminato, cc. 42 × 2 mm; velo in adultis subnullo.—Contexto inodoro vel subinodoro.—Sporis 8.2–9.5 × 4.8–5–(5.2) μ, ellipsoideis, poro germinativo lato truncato munitis, levibus, intense brunneis.—Hymenio e basidiis, chrysocystidiis et metuloidibus efformato. Basidiis 20.5–24 × 7–8 μ, tetrasporis. Chrysocystidiis ad aciem et latera lamellarum praesentibus, 20–40.5 × 8–9 μ, apice 2–10 × 2.5 μ, ventricoso-ampullaceis vel vesiculoso-ventricosis et mucronatis, corpusculo flavo amorpho (KOH) instructis. Metuloidibus 51.5–66 × 9–15 μ, contentu amorpho atque incrustatione pigmenti destitutis, membrana 0.7–1 μ crassa instructis, fusiformibus vel fusoideo-ampullaceis, saepe longe pedicellatis (pedicello tenui-tunicato), apice tenui, subacuto, vel rotundato-obtuso praeditis, hyalinis, rarius pigmento membranali fulvo vel ochraceo praeditis, ad aciem et latera lamellarum numerosis.—Hyphis fibulatis, pallide stramineo-citrinis.—Epicute pilei et strato externo stipitis gelatinosis, ex hyphis repentibus filamentosis efformatis.—Ad humum lignosum sub arboribus frondosis (*Drimys*) et acerosis (*Saxegothaea*), subsolitario, autumnalis.—Typus a R. Singer (M 5535) in CHILE, Valdivia, Cordillera Pelada, in silvis sine Nothofagis in 800 m altitudine rarius obvia species Maio mense (9–V–1965) lectus et in Herbario BAFC conservatus est.

PHOLIOTA FREINDLINGIAE (Sing., Beih. Botan. Centralbl. B 56: 170. 1936, as *Flammula*) Sing., Lilloa 22: 516. 1951.

Pileus at first brown with paler or more yellowish brown margin (e.gr. "Mandalay" on disc, "India spice" on margin), extreme margin often champagne colored ("champagne" M & P), eventually deeper and more chocolate (between "Piccaninny" and "chocolate" M & P), smooth, glabrous, naked, glutinous, convex or convex with umbo, with at first incurved margin, 30–78 mm broad.—Lamellae greyish-cream-pallid ("sheepskin" M & P), then gray to argillaceous ("cracker" to "tanbark" M & P), narrow to moderately broad (3–6 mm), close to crowded, sinuate to adnate, or even with a slightly decurrent tooth. Spore print argillaceous-brown, light ochraceous brown.—Stipe on white or whitish ground girdled with ochraceous or palest ochraceous ("topaz" M & P or paler) zones, in some cases, belts indistinct or absent, especially in older specimens, with a viscid coating which is interrupted at the belts, stuffed or solid, soon becoming narrowly hollow, cylindric or (mostly) tapering upwards, 32–38 × 6–14 mm; veil strongly developed, coarsely cortinoid, but fibrils condensed into an apical annulus which is generally well formed and persistent, pendulous, rarely fugacious and collapsing, hyaline-

pallid, viscid on the outside, leaving eventually a pure white annular zone.—Context white, unchanging, or becoming gradually brown in age from the base of the stipe upwards (the brown color even at times visible on the surface of the basal portion of the stipe); odor none; taste mild.

Spores (4.5)–5–6.5 × (3)–3.5–4.2 μ, most commonly 6 × 3.7 μ, ovoid to ellipsoid, but appearing slightly phaseoliform in lateral view and thus up to 0.5 μ broader in face view than in profile, ochraceous brown, with or without a slight and narrow germ pore which is not truncate, smooth. —Hymenium: Basidia 13–25 × 4.5–6.5 μ, 4-spored, the hymenial layer characteristically yellowish in KOH. Cheilocystidia rare to scattered, vesiculose-pedicellate, e.gr. 22 × 15 μ. Cystidia firm but thin-walled to rather thick-walled and metuloid (wall 0.5–1 μ), 36–69 × 10–19 μ, apex generally rather short and 3.5–6 μ broad, obtuse, in the middle or slightly below the middle ventricose, walls at apex of the same diameter as below, or considerably thinner, up to 32 μ projecting, stramineous hyaline to light stramineous in NH_4OH and KOH, with yellow crystalline muricate incrustation at the apex which contains also (and sometimes exclusively) resinous matter without crystals (the crystals apparently of calcium oxalate), pedicellate.—Hyphae with clamp connections, in the hymenophoral trama regularly arranged, the trama proper not gelatinized, its hyphae with firm walls and 4–12 μ broad; hymenopodium distinctly gelatinized, consisting of very thin filamentous hyphae.—Epicutis of pileus consisting of a broad gelatinized layer of 0.5–4 μ thick filamentous hyphae which are strongly brown pigment-incrusted; hypodermium of somewhat to considerably broader and shorter hyphae which are running more or less radially and are not gelatinized, equally or more pigment-incrusted than those of the epicutis, some of the elements as short as 16 × 10 μ or 22 × 17 μ so that this layer in places gives the appearance of being subcellular; below the hypodermium there is no noticeable pigment-incrustation.

On the ground near and around old trunks of *Nothofagus* (and *Pinus*) but never directly on wood, and some rather away from the trunks, among grasses or lichens, gregarious, but not cespitose. Fruiting in fall.

Material studied: U.S.S.R.: Karelia: Kivatch Nat. Park, fall 1935, leg. M. Freindling (LE), typus.—CHILE: Valdivia: Cordillera Pelada, east slope, at "Chivería", 7–V–1967, Singer M 6753 (SGO).

The Chilean collection was compared with the type, and agrees with it in all characters. This is very close to *P. lubrica* but differs from it in the frequent murication of the cystidia, a distinct and rather persistent if thin annulus, and slightly smaller spores. Some European specimens of *P. lubrica* come rather close to our species, some even having a slight annulus, but the color of the pileus (light "fuchsig" according to Moser)

is different from our specimens. We have compared *P. lubrica* in the field, both in Russia and North America, and find it always distinguishable.

PHOLIOTA SPUMOSA (Fr.) Sing., Sydowia 2: 37. 1948.

Var. **crassitunica** Sing. var. nov.—Membrana cystidiorum usque ad 2.2 μ crassa. Typus M 6712 (SGO) [1]).

Pileus red-brown, ochraceous brown, fulvous, rusty in the center, with melleous to yellow margin (e.gr. "chutney", "Mandalay", "henna" or "gypsy", with "honeysweet" margin, M & P), the extreme margin often bright lemon yellow or pale ochraceous (like "raffia" M & P), not striate or sulcate, quite smooth, glabrous, and generally naked, viscid, convex, eventually often depressed or applanate, obtuse or umbonate, rarely papillate in a depressed center, 14–36 mm broad; veil on pileus at first often slightly fibrillose in the extreme marginal region, but generally disappearing in early youth.—Lamellae at first pale yellowish, soon assuming argillaceous or gray shades, rarely a slight olive shade, eventually brown from the spores, medium broad to broad, even ventricose, close to subclose, sinuate-adnexed to adnate, even adnate-subdecurrent, eventually sometimes separating from the apex of the stipe. Spore print about "snuff brown" (Ridgway).—Stipe whitish to stramineous-pallid but becoming more yellow at extreme apex or the entire apical region and brownish to deep chestnut brown in the lower portion, finely fibrillose in upper half and tending to be subtomentose in brownish portion, the fibrils either brownish or pallid, or a sordid grayish cream like the cortina, these fibrils tending to become coarse, but at first silky, generally appressed, equal or slightly tapering upward, 21–58 × 2–6 mm; veil cortinoid, pallid to sordid grayish cream, not forming an annulus, or rarely a mere annular zone which is very fugacious, silky-fibrillose on the surface of the stipe, dry (the whole surface of the stipe constantly dry, not viscid).—Context pallid to yellowish white, or concolorous with the cortina; odor none; taste mild (not raphanaceous or farinaceous).

Spores 6.5–8.8–(10) × (3.3)–4–5.3–(5.8) μ, ellipsoid to ellipsoid-ovoid, with or without suprahilar applanation, rarely short-cylindric, mostly not reniform, only a few spores of a (brown) print being slightly to distinctly phaseoliform, smooth, with distinct germ pore which is mostly not truncate, rarely in a number of spores narrowly truncate, golden ochraceous to brownish ochraceous or melleous-ochraceous, smooth.—Hymenium consisting of basidia and metuloids (but see note below). Cheilocystidia scarcely differentiated, much like the pleurocystidia, these often metuloid,

[1]) This variety would key out with *P. ferrugineolutescens* Smith & Hesler (ms).

but also many thin-walled ones present (in variable proportions), on edges crowded, on sides less crowded but always numerous, 33–80 × (7)–8–23–(25) μ, generally ventricose below and ampullaceous, the "neck" cylindric, more rarely attenuated to an obtuse tip, short or long, at times the majority with one to two constrictions, one at the base of the "neck", the other one underneath a subcapitate or claviculate apical swelling, rarely with forked apex, a certain number of the cystidia always incrusted by a golden yellow to golden brown resinous incrustation, or by resinous granules, with thin to thick wall either all over, or with wall thickening restricted to the ventricose part, wall 0.2–2.2 μ thick. Chrysocystidia generally none, but some cystidia may have golden granular contents in some specimens. Basidia 18–22–(24.5) × 6–7.5–(8.5) μ, 4-spored, hyaline or light ochraceous.—Hyphae with clamp connections, in the regular hymenophoral trama proper not gelatinized, but in the hymenopodium distinctly gelatinized, hyaline, and thin filamentous, hyphae of trama proper often relatively broad, not quite parallel with each other and pale stramineous to subhyaline.—Epicutis of pileus gelatinized, moderately broad, with repent filamentous hyphae, some of which pigment incrusted in the central portion of the pileus; hypodermium scarcely more pigmented or distinctly more pigmented, not gelatinized. Surface of pileus not showing any gelatinized elements.

On wood as well as on rotting leaves, humus, or earth among small pieces of rotting chips etc., fruiting in summer, fall, and winter.

Material studied: CHILE: Valdivia: Hueycolla, 4–V–1967, Singer M 6712 (SGO).—5 km north of Conales, 14–V–1967 Singer M 6907. (SGO). —Santiago: 2 km west of Ranque, 6–VII–1967, Singer M 7110 (SGO).— Cerro Robles, 19–VI–1967, Singer M 6979 (SGO).—Colchagua: Pumanque, June 1967, W. Lazo PU-69, PU-81 (SGO).—ARGENTINA: Antarctica, Deception Island, Pendulum Cove, on abandoned whaler's boat imbedded in sand and sponges, heated by fumaroles, comm. Dr. Watson (formalin preparation(BAFC)[1]).—Neuquén: San Martín de los Andes, 7–IV–1951, Cei & Tomsic, comm. Singer M 471 (LIL).—Rio Negro: Santa María, Lago Nahuel Huapí, Singer M 5067, 19–IV–1965 (BAFC). —M 3716, 30–IV–1964 (BAFC).—Mendoza, 29–VI–1936, Ruiz Leal 3992 (BAFC, and Herb. Ruiz Leal, Mendoza).—Buenos Aires: Ezeiza, under conifers on earth, Piterbarg, comm. Singer S 439 (BAFC)[2]).—Numerous collections from Europe[3]).

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[1]) Possibly var. *spumosa*.

[2]) Apparently var. *spumosa*, apparently introduced.

[3]) Many, if not all, var. *spumosa* which differs from var. *crassitunicata* in having a majority of thin-walled pleurocystidia, wall rarely reaching 1.2 μ in diameter.

In a few collections we have observed the presence in the hymenium of a number of characteristic chrysocystidia, 34–35 × 11–12 μ, ampullaceous with narrow short mucro or "neck", with distinct yellow amorphous enclosure, thin-walled, not numerous. Since these collections show all the other characters observed in this species, and were collected near *P. spumosa* var. *crassitunicata,* we do not consider these as a separate species. For the time being we describe them here as:

Var. **chrysocystidiophora** Sing. var. nov.—Chrysocystidiis praesentibus.—Typus a R. Singer lectus in provincia valdiviana chilensi, 4–V–1967 et in Herbario SGO conservatus.

At the level of certain species in this genus, the presence or absence of chrysocystidia is not fully constant as a specific character. The case of *P. spumosa* is not the only one. We have indicated the same phenomenon in *P. privigna* although, in this latter case, it is not probable that populations without any chrysocystidia occur. In case this were so, the distinction between it and *P. megalosperma* would become very difficult. Nevertheless, one may assume that the variability of the chrysocystidial character is apparently limited to the cystidiate species, more specifically those with a tendency to form metuloid pleurocystidia. As a consequence, and likewise in consideration of the fact that the occurence of chrysocystidioid metuloids is not a constant character in the species concerned, we are forced to abandon section *Privignae,* proposed by us in Sydowia 15: 70. 1961 and combine this section with section *Lubricae* (Fr.) Sing.

Var. **spumosa.** Cystidial wall mostly up to 1.0 μ thick. Not native to our region, but probably adventicious, compare also material studied under var. *crassitunicata,* and footnotes 1–3.

PHOLIOTA BAEOSPERMA Sing., Sydowia 7: 217. 1953.

Description see there. It must however be added that the spore measurements as given in this original diagnosis are not correct insofar as they include spore measurements on a specimen that is certainly not conspecific. The correct spore measurements are: 4.8–7.7 × 3–4.2 μ. The size of the spores is the best means of differentiating *P. baeosperma* from *P. spumosa.* The structure of the epicutis is approximately the same as in *P. spumosa*—an ixocutis of filamentous hyphae some of which are incrusted by yellowish golden to gold brown pigment.

Material studied: CHILE: Lonquimay, W. Rühm, no. 7b (BAFC).—ARGENTINA: Tierra del Fuego: east end of Lago Fagnano, 19–II–1950, Singer M 368 (LIL), typus.—Rio Negro: Cerro Catedral, 1100 m alt., Singer M 5172, M 5170, 24–IV–1965 (BAFC).—Neuquén: Cerro Cortinario, above Puerto Manzano, 26–IV–1964, Singer M 3552 (BAFC).—

11–IV–1963, Singer M 3369 A (BAFC).—Villa Angostura, Selva Triste, 12–III–1963, Singer M 3053 (BAFC).—Lago Lácar, Pucará, 6–XI–1966 (spring), Singer M 6017 (BAFC).

PHOLIOTA BLECHNI Sing. in Sing. & Moser, Mycopath. & Myc. Appl. 26: 75. 1965.
Description and illustration see there.

PHOLIOTA MEGALOSPERMA Sing., Sydowia 7: 217. 1953.
Description, see there.
Material studied: CHILE: Valdivia: Mirador, 900 m alt., on wood of *Fitzroya* and *Nothofagus betuloides*, 6–V–1967, Singer M 6742 (SGO).—On very rotten wood buried in the Sphagnetum with *Nothofagus antarctica*, 9–V–1965, Singer M 5642 (BAFC).—ARGENTINA: Tierra del Fuego: Nueva Argentina, on decayed wood of *Nothofagus pumilio*, 10–II–1950, Singer M 166.—17–II–1950, Singer M 336 (both LIL), typus. Neuquén: Quetrihué: on trunks of *Nothofagus dombeyi*, 15–V–1952, Singer M 623 (LIL).

Pholiota septembris Sing., spec. nov.—Pileo ferrugineo-brunneo vel brunneo-fusco (inter "Arab" et "Clove" M & P), margine pallidiore, viscido, glabro, convexo, mox applanato circum umbonem exiguum, 19–20 mm lato.—Lamellis griseis ("thrush" vel "oak buff" M & P), latissimis, subconfertis, adnatis, dente paullum subdecurrentibus.—Stipite brunneolo-albido vel stramineo, sicco, annulato, subaequali vel leniter attenuato apicem versus, 37–57 × 2–3.5 mm; velo annuliformi, annulo apicali, angusto, interdum nonnullis cingulis medianis etiam formatis.—Contexto inodoro.—Sporis 9.5–10.5 × 6.5–7.5 × 6–6.6 µ, breviter ellipsoideis vel ellipsoideis, haud reniformibus, levibus, poro germinativo truncato praeditis, fortiter pigmentatis, ferrugineo-ochraceo-brunneis (KOH).—Hymenio: Basidiis 24 × 8.5 µ, tetrasporis. Cystidia 40–65 × 13–18 µ, ventricosis, centro constrictis (8–11 µ diam.) tenui-tunicatis, interdum bifurcatis, obtusis, ad latera lamellarum sat numerosis. Cheilocystidiis pleurocystidiis simillimis vel subclavatis, angustiroribus, 30–50 × 7.5–10 µ.—Hyphis fibulatis, in tramate hymenophorali regulari hyalinis vel nonnullis flavis, filamentosis; hymenopodio haud gelatinoso.—Epicute pilei e pellicula (ixocute) 40–50 µ crassa consistente; hypodermio haud gelatinoso, pigmento incrustante ferrugineo-ochraceo-brunneo ornato, latissimo (mediam partem tramatis pilei occupante, cutem efformante). Superficiali stipitis strato haud gelatinoso, hyphis externis satis angustis, flavis.—Ad terram arenosam inter muscos, vernalis.—Typus a R. Singer (M 7588) in CHILE: Llanquihue, Salto de Petrohué, 17–IX–1967 collectus et in SGO conservatus est.

This species has rather deeply pigmented spores with broad germ pore and, in this regard, reminds one of *P. frowardii, P. agrocybiformis,* but there does not seem to exist any affinity between it and the genera of Strophariodeae.

Pholiota agrocybiformis Sing. spec. nov.—Pileo vivide brunneo (inter "Arab" et "burnt umber" M & P), subviscido, vix hygrophano, glabro, breviter sulcato, haud pellucide striato, convexo, dein applanato, interdum centro leniter depresso, frequenter umbonato, sed aequliter frequenter obtuso, 14–21 mm lato.—Lamellis argillaceis, demum e sporis brunneo-tabacinis, latis, subconfertis, interdum dente decurrentibus.—Stipite primum albo, demum plus minusve ochraceo, levi, farcto, dein cavo, sub annulo fibrilloso, praesertim aetate, aequali, 22–25 × 2.5–3.5 mm; mycelio basali crude fibroso, albo, interdum rhizomophis albis observatis; velo annuliformi, annulo primum albo, demum subochraceo, membranaceo et crassiuscuo, haud fugaci et saepe admodum persistente, apicali, haud late distante, infundibuliformi, levi.—Contexto albo; odore nullo; sapore miti, nec styptico neque amaro, haud farinaceo.—Sporis 8.5–9.5 ×6–6.5 μ, breviter ellipsoideis vel ellipsoideis, levibus, poro germinativo angusto haud truncato praeditis, depressione suprahilari nulla praeditis, membrana moderatim crassa ochraceo-brunnea in aqua, subvivide ochraceo-brunnea in KOH et tunc crassa munitis (evidenter in alkali turgescente).—Hymenio e basidiis consistente et cheilocystidiis marginato. Basidiis 25–30 × 8–9 μ, clavatis vel centro constrictis, tetrasporis. Cheilocystidiis in aciebus heteromorphis densissimis, 24–38 × 7–15 μ, versiformibus, e.gr. ventricosis, saepe centro constrictis aut ampullaceis, tenuised firme tunicatis, haud incrustatis et optice vacuis, ad apicem rotundato-obtusis. Chrysocystidiis et metuloidibus nullis.—Hyphis fibulatis, in hymenopodio hyalino haud gelatinosis nec in mediostrato (in propio tramate) gelatinosis, in tramate hymenophorali nonnullis septis defibulatis visis, hyalinis, in stipite parallelis, 3–14 μ latis.—Epicute pilei hyphis hyalinis, gelatinosis, ixocutem formantibus, filamentosis formata, hyphis 1–4 μ latis, levibus, strato toto gelatinisato 140–150 μ lato. Hypodermio ex elementis cutem efformantibus, haud gelatinisatis efformato, pigmento ochraceo-brunneo incrustatis. Strato superficiali stipitis haud gelatinoso, vix differentiato.—Ad terram arenosam vulcanicam, interdum ad lignum putridum inter arenas, gregatim.—Typus a R. Singer (M 7598) verne (18–V–1967) in CHILE: Llanquihue, inter Ensenada et Ralún lectus et in SGO conservatus est.

Pholiota psathyrelloides Sing. spec. nov.—Pileo dactylo-brunneo vel brunneo-fusco, melleo, melleo-ochraceo, gilvo, ad marginem argillaceo

vel sordide luteolo vel pallido, sat versicolore, in adultis vel vetustis saepe unicolore, fuscidulo vel fusco, viscido, levi vel breviter sulculato-striato vel pellucide striato (per 1–2 mm), convexo, dein frequenter medio leniter depresso, obtuso, 25–55 mm lato; velo subtili, in juvenilibus tantum ad marginem pilei fibrilloso-sericeo fimbriato, perufaci et sub lente tantum manifesto.—Lamellis pallide argillaceis, dein argillaceis, demum dilute brunneis ("tiffin" M & P), satis angustis (3–4 mm latis), confertis vel confertissimis, ad aciem sub lente fimbriatis, adnexis, sinuato-adnexis vel rarius adnatis. Sporis in cumulo colore Hebelomatis fastibilis gaudente.—Stipite albo vel flavido-albo, dein pallido vel interdum sordide albidulo, sericeo vel subsericeo, ad apicem subglabro vel furfuraceo-pruinoso-fibrilloso, exannulato, sicco, aequali, e farcto cavo, 50–70 × 4–5 mm; velo vix manifesto, sericeo, fugaci; mycelio basali albo.—Contexto albo, sed in centro stipitis interdum brunneo-fusco, odore nullo; sapore miti.—Sporis 6.5–8.7 × 3.8–5 μ, ellipsoideis vel ovoideo-fusiformibus, poro germinativo angustiore sed interdum truncato praeditis, levibus, brunneolo-ochraceis vel melleo-ochraceis, endosporio melleo-hyalino et episporio tenui sed obscuriore instructis.—Hymenio e basidiis consistente et cheilocystidiis marginato. Basidiis 21–25 × 5.8–6.8 μ, tetrasporis. Cheilocystidiis 30–62 × 4–11 μ, basi anguste cylindracea vel ventricosa praeditis et sub apice claviculato vel frequentius subcapitato vel capitato (4–11 μ lato) leniter constrictis, colliculo saepe longiusculo, 2–4–(5) μ lato et membrana tenui, hyalina praeditis. Metuloidibus et chrysocystidiis nullis.—Hyphis fibulatis, in tramate hymenophorali et hymenopodio haud gelatinosis, ibi hyalinis et regulariter dispositis.—Epicute pilei lata, fortiter gelatinisata, ex hyphis filamentosis, horizontalibus, hyalinis efformata; hypodermio etiam cutem ex sibi efformante, ex hyphis pigmentatis sed pigmento haud vel vix incrustatis, ochraceo-brunneis, eis epicutis latioribus et interdum sat brevibus efformato; sub hypodermio tramate pilei subhyaline vel hyalino.—Ad humum et terram in silvis nothofagineis, autumno.—Typus (M 1827) a R. Singer in Argentina lectus et in BAFC conservatus est.

Material studied: ARGENTINA: Neuquén: Los Cántaros, 15–III–1959, Singer M 1827 (BAFC), typus.—Lago Correntoso, 20–IV–1965, Singer M 5087 (BAFC).—M 5091 (BAFC).—Puerto Mánzano, leg. M. Singer, comm. Singer 30–III–1963 (BAFC).—18–IV–1965, Singer M 5042 (BAFC).

This species forms a stirps together with *P. oedipus*, *P. microcarpa* from which it differs in the narrower spores and the *Psathyrella*-like appearance.

Pholiota microcarpa Sing., spec. nov.—Pileo juvenili dilute fuscidulo ("Aztec" M & P) vel gilvo, dein brunneo ("hazel" M & P), margine

primum pallido vel brunneo-ochraceo vel pallide gilvo, viscido, glabro, (vel e velo sericeo), levi estriatoque, in siccis saepe nitente, semiglobato vel convexo, saepe mox centro applanato vel leniter depresso, rarius subumbonato, 8–25 mm lato; velo albo vel grisello-pallido, margini pilei superimposito, sericeo, perfugaci, saepe subnullo sed saepe appendiculato et moderatim persistente.—Lamellis pallide argillaceo-griseis dein brunneolis ut Hebelomatis fastibilis ("toast" vel "tanbark" M & P), in siccis fuscidulis (15–E–12, M & P), angustis dein, praesertim in tertia parte marginali sat latis, ad acies pallidis, confertis vel rarius subconfertis, rotundato-adnexis vel sinuato-adnatis, interdum dente decurrente. Sporis in cumulis supra lamellas subferrugineo-brunneis.—Stipite albo, albido vel pallide gilvo, a basi brunnescente vel fuscescente, sicco, primum e velo sericeo, dein glaberrimo, aequali vel ad basin vel ad apicem attenuato, 10–37 × 0.8–3.5 mm; velo albo, raro grisello-pallido, cortinoideo, in stipite zonam sericeam tantum depositante, plus minusve fugaci, haud annuliformi.—Contexto albo vel albido-pallido, in stipite dein brunneo vel fusco; sapore miti, haud raphanaceo nec farinaceo, odore subnullo.—Sporis 7.3–9 × 5–6.5 μ, ovoideis, breviter ellipsodeis, ellipsoideis, paucis leniter phaseoliformibus, immaturis hyalinis, dein partim melleis vel intense ochraceo-brunneis, bene pigmentatis in maturis, levibus, haud lentiformibus, appendiculo hilari parvo et poro germinativo aut vix truncato aut subtruncato vel truncato, plerumque manifesto munitis, poro interdum obliquo, depressione suprahilari generatim destitutis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 18–28 × 6.3–8 μ, admodum versiformibus, hyalinis vel ochraceis, plerumque omnibus tetrasporis, raro nonnullis bisporis. Cheilocystidiis 22–49 × 5.8–11.3 μ, ampullaceis vel ampullaceo-subcapitatis vel subclavicularibus e constrictione vel constrictionibus, sed interdum apice cylindraceo aut subattenuato, brevi vel longo praeditis, obtusis, tunc apice ita ut constrictionibus 4.5–6 μ diam., incrustatione amorpha absente vel praesente et tunc hyalina, rarius fulvidula, capitulo 6.5–10 μ diam. Pleurocystidiis nullis.—Hyphis fibulatis, in tramate hymenophorali regulariter dispositis, filamentosis.—Epicute pilei lata pelliculosa (ixo-cutem formante), gelatinosa, subhyalina, sed hyphis nonnullis pigmento melleo incrustatis; hypodermio magis pigmentato, ex elementis saepe breviusculis nec non tumescentibus haud gelatinascentibus efformato, sed haud subcellulari, ochraceo-brunneo e pigmento membranali. In strato externo stipitis hyphis haud gelatinosis.—Ad frustula lignea et ad truncos praecipue nothofagineos in silva, autumnalis.—Typus a R. Singer (M 3169) lectus et in BAFC conservatus est.

Material studied: ARGENTINA: Rio Negro: Path from Laguna Frías to Paso de las Nubes, 24–III–1963, Singer M 3169 (BAFC), typus.—

Lago Nahuel Huapí, Brazo Tristeza, 7–V–1964, Singer M 3997 (BAFC). —Neuquén: Puerto Manzano, 5–IV–1963, Singer M 3277 (BAFC).—Lago Correntoso, 20–IV–1965, Singer M 5005 (BAFC).—CHILE: Valdivia: 5 km north of Conales, 14–V–1967, Singer M 6899 (SGO).

In this species as in other species of the same stirps, we often find the hymenium early disorganized and the basidia partly aborted. The hyphae are inamyloid. The present species is common in our region, in contrast to *P. oedipus* which differs in its habitat and less intensely colored spores in KOH.

PHOLIOTA OEDIPUS (Cooke) Orton in Dennis, Orton & Hora, New Check List of British Agarics and Boleti, Suppl. Brit. Myc. Soc. Transactions p. 136; Trans. Brit. Myc. Soc. 43: 180. 1960.

For a description and illustrations see Kühner & Romagnesi, Bull. Soc. Natural. d'Oyonnax 10–11: 87, Suppl. hors série 1957, under the name *Dryophila oedipus*.

Material studied: CHILE: Colchagua: Pumanque, winter 1967, W. Lazo PU-90 (SGO).—NETHERLANDS: North Brabant: Dorst near Breda, P. B. Jansen, 3–I–1961 (winter), (L), seen fresh.—Nord Holland, Kits Van Waveren, 26–XII–1959, det. Bas (L).

PHOLIOTA CARBONARIA (Fr.) Sing., Lilloa 22: 517. 1951.

For a description and illustration of this species see Ricken, Blätterpilze, p. 205, 1910–15, and pl. 58, fig. 3. We find the spore print between "Dresden brown" and "cinnamon brown" (Ridgway) in thin, or medium thick layer, near "Prout's brown" in thick layer. This species should not be confused with *P. spumosa* (description see above) and *P. ascophora* which has chrysocystidia whereas typical *P. carbonaria* never shows any.

Material studied: CHILE: Valdivia: Chivería, 31–III–1963, Singer M 3268 (BAFC).—ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 7–V–1964, Singer M 4002 (BAFC).—M 3996 (BAFC).—M 3999 (BAFC).—Numerous collections from North America and Europe.

Psathyrella fuegiana Horak from Shell Bay, 13–I–1924, determined by Spegazzini as *Naucoria abstrusa* (LPS), may be the same species, but the material is rather poor, and Horak's data insufficient.

Kuehneromyces

KUEHNEROMYCES MACROSPORUS Sing., Sydowia 7: 220. 1953.

Pileus "Arab", "cocoa", "burnt umber" with "Titian" or "tiffin" (M & P) margin, hygrophanous, viscid, yellowish buff in dehydrated condition,

when very old and watersoaked becoming deep tobacco brown, smooth, more rarely indistinctly sulcate when old, glabrous, naked, low campanulate convex or convex when young, later convex and becoming applanate to depressed around the center which is subumbonate or umbonate in most caps, 6–25 mm broad; veil at first often appendiculate, white.—Lamellae argillaceous to gray, becoming grayish brown, white fringed at edges, broad to very broad, subclose to distant, subascendant or subhorizontal at first, soon becoming horizontal and often ventricose, but also flat or arcuate, adnate to adnate-subdecurrent, sometimes decurrent. Spore print "oak, briar" M & P.—Stipe white or pallid, becoming melleous in the cortex from the base upwards in most specimens, covered by silky appressed fibrils from the veil up to the annulus, hollow, equal or slightly thickened at the base, more rarely tapering upwards, or downwards, 25–52 × 1–3 mm; veil annuliform, and besides consisting of silky-fibrillose appressed covering below the annulus, white or whitish, annulus membranous, well developed and mostly persistent, apical, funnel-shaped, then shirt-like pendulous, not very broad, white, striate above.—Context paler than surfaces, unchanging, inodorous.

Spores varying between 9.5–11 × 6.2–6.8 μ and 9–10 × 7–7.5 μ, ellipsoid to rather broadly ovoid-ellipsoid, not lentiform, deep brownish ochraceous in water as well as in NH_4OH and KOH, smooth, with thick compound wall, with broad, hyaline more or less truncate (in fewer spores non-truncate) germ pore.—Hymenium consisting of basidia and bordered by cheilocystidia. Basidia 28 × 8–8.5 μ, clavate, 4-spored. Cheilocystidia 34–50 × 6.5–10.5 μ, clavate or clavate-subcylindric, sometimes with a subapical constriction and then at times almost subcapitate, but mostly in the shape of the basidioles but larger, hyaline, making the gill edge heteromorphous. Pleurocystidia none.—Hyphae with clamp connections, hymenophoral trama regular, some oleiferous hyphae present. —Epicutis of pileus—a 30–35 μ thick ixocutis, hyaline; hypodermium consisting of interwoven filamentous to broadly cylindric elements which are much broader than those of the epicutis, non-gelatinous, with ochraceous-brown incrusting pigment.

On earth and sandy soil mixed with volcanic ashes, sometimes among grasses or mosses, in open woods or outside the woods, generally solitary or gregarious but scattered, fruiting in fall.

Material studied: CHILE: Volcán Osorno, 2 km from Petrohué, prov. Llanquihue, 10–V–1967, Singer M 6844 (SGO).—West side of Volcán Osorno, at 1000 m alt., 12–V–1967, Singer M 6856 (SGO).—ARGENTINA: Tierra del Fuego: Estancia Nueva Argentina, February 1950, Singer M 310 (LIL), typus.

KUEHNEROMYCES CYSTIDIOSUS Sing., Sydowia 7: 221. 1953.
Description see there. This was collected only in Tierra del Fuego.

Kuehneromyces castaneiceps Sing., spec. nov.—Pileo atrorubido-brunneo ("leafmold" M & P), centro plus minusve obscuriore, exsiccato grisello-brunneolo ("Vandyke brown" M & P), hygrophano, haud viscido, in maturis per medium radium pellucide striato, convexo dein subapplanato, umbonato, usque ad 17 mm lato; velo in adultis nullo.—Lamellis cinnamomeis ("mustard br." M & P), sat latis, confertis, adnexis vel subadnatis.—Stipite brunneo, glabro, aequali sed saepe curvato, 22 × 1.2 mm cc. metiente; velo pallido cortiniformi, apicem stipitis cum pilei margine connectente sed vestigium in stipite haud monstrante.—Contexto inodoro. —Sporis 6–7.5 × 3.8–4.2 μ, ellipsoideis, haud vel vix lentiformibus, poro germinativo truncato praeditis, melleo-ochraceo-brunneis.—Hymenio e basidiis efformato, cheilocystidiis marginato. Basidiis 18–19.5 × 5.5–6 μ, tetrasporis. Cheilocystidiis 29–38 × 9–17 μ, clavato-vesiculosis vel ampullaceis, illis mucronatis vel obtusis, his apice brevi praeditis, obtusis, hyalinis, nonnullis ad basin ochraceo-brunneolis, paucis brunneolis ex integro, nonnullis interdum conniventibus et subfasciculatis, interdum basidiis interruptis. Pleurocystidiis nullis.—Hyphis fibulatis.—Epicute pilei hyalina, ex hyphis filamentosis haud gelatinisatis, 4–5 μ latis efformata. Hypodermio ex elementis multum latioribus ad septa constrictis, multiseptatis, pigmento brunneo fortiter incrustatis, cutem efformantibus consistente, a tramate propio pilei paullum distinguendo.—Ad lignum emortuum.—Typus a R. Singer (M 6715) in CHILE, prov. Valdivia, loco Hueycolla nominato 4–V–1967, lectus est et in Herbario SGO conservatur.

This species is closely related to *K. nudus* Sing. of the American subtropics, but differs in the characteristic colors and the diameter of the cheilocystidia.

Pachylepyrium

PACHYLEPYRIUM FUNARIOPHILUM (Moser) Sing. & Moser, Mycopath. & Mycol. Appl. 26: 171. 1965.
Description see there.

Pachylepyrium squarrulosum Sing. spec. nov.—Pileo brunneo, hygrophano, dehydratatione pallidiore, ad marginem in adultis per quartam partem radii striato, flocculoso-squarroso ex toto, floccis squarrosis aut concoloribus aut albidis aut concoloribus ad suam basin et albidis ad apicem, campanulato, 6 × 6 mm.—Lamellis subferrugineis vel ferrugineis, ascendentibus vel oblique subascendentibus, angustis, confertis, adnatis.—

Stipite dilute brunneo, minute ex toto albido-fibrilloso vel albido-floccoso, exannulato, 24–25 × 1.5 mm cc.—Sporis 12–14 × 7–8 × 6.5–7 μ, primum nonnullis rotundato-subrhomboideis, dein, maturitate, omnibus fere oblongis, applanatione vel depressione debili suprahilari praeditis vel destitutis, levibus, membrana complexa sed homogenea (haud ornamentata) instructis, laete et intense ferrugineis (KOH), poro germinativo truncato praeditis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 29–33 × 12.3–12.7 μ, breviter clavatis, tetrasporis. Cheilocystidiis aut 30–40 × 5–10 μ, subtus ventricosis, apice aequali, obtuso 2.2–3 μ crasso, longiusculo praeditis et ita ampullaceis vel apice subcapitulatis (capitulo 3–5 μ lato) et sub apice constrictis (constrictione 2–3 μ diam.) aut 30–40 × 2.5–4 μ et filamentoso-cylindraceis et leniter apice dilatatis, numerosis. Pleurocystidiis nullis.—Hyphis fibulatis, in tramate hymenophorali regulariter dispositis.—Epicute pilei hyalina vel subhyalina, ex hyphis cutem efformantibus, levibus, haud gelatinascentibus consistente; hypodermio crasso ex elementis filamentosis vel claviformiter tumescentibus (usque ad 42 × 17 μ), e pigmento incrustante ferrugineis efformato, haud gelatinoso.—Ad lignum subustum putrescens Fitzroyae, solitario, autumnalis.—Typus a R. Singer (M 6550) in CHILE, prov. Valdivia, Mirador, 1000 m alt., 29–IV–1967 lectus et in Herbario SGO conservatus est.

Pleuroflammula

PLEUROFLAMMULA HIBERNIANA (Pearson & Dennis in Pearson) Sing., Sydowia 15: 70. 1961.

This has been described by Pearson, l.c., with illustration.

Material studied: TRISTAN DA CUNHA: 7–III–1938, Mejland 1689, det. Singer (K).—No. 1706 (K).—IRELAND: Killarney, 29–VIII–1946 (K), typus.

Known hosts are *Phylica* and *Tilia.*

Pleuroflammula majuscula Sing. spec. nov.—Pileo flavo ("primulin y" M & P), subbrunnescente (demum "Punjab" M & P), subtiliter tomentoso, haud viscido, convexo, obtuso, 12–28 mm lato; velo nonnumquam lineam concentricam cis marginem pilei efformante, flavo.—Lamellis flavis ("Narcissus" M & P), dein laete ferrugineis ita ut in Gymnopilo sapineo, subangustis, confertis vel confertissimis, arcuatis, adnatis, demum separatis a stipitis apice.—Stipite lamellis concolori, primum veli causa prope apicem foccoso-fibrilloso, dein debiliter fibrilloso, ceterum glabro et nudo, curvato, et excentrico in adultis, sed in juvenilibus interdum centrali, subaequali, sed ad basin saepe leniter incrassato, 9–16 × 2–3.5 mm; velo

flocculoso-fibrilloso, flavo, haud persistente, haud annuliformi.—Contexto flavo in pileo; sapore amaro; odore nullo vel debili.—Sporis 7–7.5 × 5–5.2 μ, ellipsoideis, lateraliter visis saepe leniter phaseoliformibus, levi, contentu refringente repletis, apiculo hilari exiguo, poro germinativo nullo munitis, sed in maturis poro angustissimo haud truncato, exceptione rarissime truncato praeditis, intense ochraceo-ferrugineis.—Hymenio e basidiis formato et cheilocystidiis marginato. Basidiis 18–23 × 5.3–7 μ, hyalinis, raro fulvis, tetrasporis. Cheilocystidiis 24–35 × 5.5–7 μ, irregulariter cylindraceis, cylindraceo-clavatis, cylindraceo-ampullaceis, frequenter excrescentiis irregularibus vel constrictionibus deformatis, integris vel raro bifurcatis, in juvenilibus ex eis acie heteromorpha, sed demum fasciculatis et conniventibus, hyalinis vel stramineis. Pleurocystidiis nullis.—Hyphis (ita ut cheilocystidia et basidia) fibulatis, in tramate hymenophorali regulariter dispositis.—Epicute pilei haud gelatinosa, ex hyphis repentibus efformata vel nonnullis hyphis fasiculariter ascendentibus, hyalinis vel fulvido-subferrugineis, filamentosis composita. Hypodermio etiam cutiformi, ex hyphis filamentosis, subhyalinis in strato superiore, magis citrinis in inferiore (dissolutione pigmenti fulvi incrustante?), in tramate magis hyalinis obviis.—Ad truncum emortuum.—Typus (M 6729) in CHILE: Valdivia: Hueycolla, 4–V–1967 a R. Singer, lectus et in Herbario SGO conservatus est.

Pleuroflammula croceosanguinea (Mont.) Sing. comb. nov.

Agaricus croceosanguineus Mont. in Gay, Hist. Chile 7: 339. 1850.

Pileus yellow ("primrose", "primulin y" 10–I–5), eventually becoming "Peruvian br." (M & P), center often reaching "burnt umber", with yellow (10–L–3 to "light chrome" M & P) fibrillose-squarrulose or subsquamulose-areolate covering and tomentose incurved margin, the latter often strongly projecting beyond the lamellae at the margin and this becoming floccose-crenate-fimbriate, conchate, somewhat sinuate in the back portion, at least in some of the mature caps, convex, 4–20 mm broad. —Lamellae brown ("centennial br.", M & P) when mature, at first pale greyish pallid, then often yellow with "Peruvian br." spots, with yellow edges, rather narrow to broad (1–3.5 mm) close or subclose, rounded-adnexed to adnate.—Stipe yellow ("primulin y" or "primrose" M & P), curved, eccentric to sublateral, young less eccentric and sometimes straight, small, 3–5 × 1–1.5 mm; veil forming a yellow to yellow brown covering of soft fibrillose material which may sometimes condense to form a narrow annular belt.—Context yellow, odor none; taste mild, or slightly bitterish.

Spores 7.5–9.5 × 5–6.2 μ, ellipsoid, more rarely ovoid, sometimes with subapplanate inner side, but without suprahilar depression, without a

germ pore, or some spores with a narrow, indistinct non-truncate one, with complex, smooth wall, a very bright cinnamon rusty, mature spores in KOH extremely intensely and vividly chestnut-ferruginous.—Hymenium consisting of basidioles, some of them sterile, and basidia, margined by cheilocystidia. Basidia 20–28 × 6–9 μ, all four-spored, or few 2-spored ones mixed in, hyaline to ochraceous yellow, often with constriction; basidioles as above or slightly smaller, some of them with a golden yellow or brown resinous incrustation and then remaining mostly sterile (cystidioles) and the hymenial surface checkered with these. Pleurocystidia none. Cheilocystidia 25–55–(66) × 4–6.3 μ, apex 25–55 × 2.5–3 μ and long-effilate, filamentous, often flexous, the tip obtuse, the basal portion rarely cylindrical, mostly ventricose, hyaline, yellow, or with an incrustation like that of some basidioles, the walls thin, edge heteromorphous.—Hyphae with clamp connections, in upper portion of pileus forming a trichodermium, in lower portion radially interwoven, with a bright yellow pigment which tends to dye the whole preparation, some hyphae also with resinous incrustations such as observed in some basidioles, the hyphae of the velar (uppermost) layer of the pileus and stipe thin, 2.5–3 μ thick, fragile (they form a friable mass in dried material), filamentous, not gelatinized; those of the regular hymenophoral trama also non-gelatinous, filamentous, yellow, or hyaline.

On dead fallen branches and logs of hardwood trees in the forest, usually gregarious, fruiting in fall.

Material studied: CHILE: Llanquihue: Peulla, Lago Todos los Santos, 21–III–1959, Singer M 1959 (LIL), as *P. peullensis* ined.—Valparaiso: Viña del Mar, 7–VI–1967, W. Lazo, VI–55 (SGO).—Colchagua, Pumanque, W. Lazo PU-93 (SGO).—ARGENTINA: Neuquén: Rincón, 18–III–1963, Singer M 3063 (BAFC), as *P. peullensis* ined.—Rio Negro: Laguna Frías, 29–III–1963, Singer M 3130 (BAFC), as *P. peullensis* ined.

This species was originally considered to be a new species, and some of the materials deposited in the herbaria BAFC and LIL were labeled as such. An examination of the original painting of Montagne's species (published as pl. 7 fig. 4, l.c.) has convinced me, however, that this is the same species although there are no blood red colors in the carpophores when well prepared.

P. croceosanguinea differs from *P. majuscula* in the smaller size, especially of the stipe, the scarcely bitterish taste, the slightly larger spores and the characteristically effilate apex of the cheilocystidia.

Inocybe

INOCYBE SUBGEOPHYLLOMORPHA Sing., Sydowia 8: 132. 1954
Description see there.

INOCYBE DILUTECINNAMOMEA Sing., Sydowia 8: 127. 1954.
Description see there.

INOCYBE SUBGIGACYSTIS Sing., Sydowia 8: 133. 1954.
Description see there.

INOCYBE GEOPHYLLOMORPHA Sing., Sydowia 7: 229. 1953.
Description see there.

INOCYBE GIGACYSTIS Sing., Sydowia 7: 231. 1953.
Description see there.

INOCYBE DISSOCYSTIS Sing., Sydowia 7: 231. 1953.
Description see there.

INOCYBE FUSCOCINNAMOMEA Sing., Sydowia 7: 231. 1953.
Description see there.

INOCYBE SUBFUSCOCINNAMOMEA Sing., Sydowia 8: 131. 1954.
Description see there.

INOCYBE ERYTHROBASIS Sing., Sydowia 8: 127. 1954.
Description see there.

INOCYBE MARILUANENSIS (Speg.) Sing. Lilloa 23: 221. 1951.
Description see Spegazzini, Bol. Acad. Nac. Cienc. Cordoba 25: 17. 1921, and notes on the type, Singer, Lilloa l.c.
The species described under this name by Singer, Sydowia 8: 126. 1954 is apparently another similar species of this group.

INOCYBE aff. *CYLINDROCYSTIS* Atk., Am. Journ. Bot. 5: 211. 1918.
Description of Patagonian material see Singer, Sydowia 8: 128. 1954.

INOCYBE NEUQUENENSIS Sing., Sydowia 8: 130. 1954.
Description see there.

INOCYBE POSTERULA (Britz.) Sacc. 5: 778. 1887.

This species is almost certainly introduced from Europe, apparently with larch. For a description of Patagonian material see Singer, Sydowia 8: 130. 1954.

Inocybe semilutescens Sing. nom. nov.

Inocybe lutescens Sing., Sydowia 7: 223. 1953, non Velen.

Description see there.

INOCYBE SUBRETIPES Sing., Sydowia 8: 133. 1954.

Description see Sydowia 7: 225. 1953 (as *I. retipes* Sing.).

INOCYBE BRIDGESIANA Sing., Sydowia 7: 227. 1953.

Description see there.

INOCYBE EUTHELES (Berk. & Br.) Sacc. 5: 776. 1887.

The Patagonian and Fuegian species is probably identical with material collected by Dolfus in Iceland, but apparently not with the type. It should be renamed. A description of the Fuegian material see Singer, Sydowia 7: 224. 1953.

INOCYBE SUBFIBROSOIDES Sing., Sydowia 7: 234. 1953.

Description see there.

INOCYBE FUSCATA Sing., Sydowia 7: 236. 1953.

Description see there.

INOCYBE MIXTILIFORMIS Sing., Sydowia 8: 129. 1954.

Description see there.

INOCYBE CERASPHORA Sing., Sydowia 7: 228. 1953.

Description see there.

Note: Several other species and redescriptions of the known species of the region will be published in a forthcoming paper by R. O. Piterbarg.

Hebeloma

HEBELOMA MESOPHAEUM (Pers.) Quél., Champ. Jura Vosg. p. 95. 1872.

Our specimens correspond precisely to the descriptions and illustrations by Konrad & Maublanc, Lange, and Kühner & Romagnesi; they have been compared with the type specimens.

Material studied: CHILE: Valdivia: Valdivia, 28–IV–1967, on burned ground near *Nothofagus* and *Quercus*, Singer M 6548 (SGO).—ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, under *Nothofagus dombeyi* in mixed (native) woods, 27–IV–1965, leg. M. Singer, comm. Singer M 5314 (BAFC).—FRANCE: Typus of *A. mesophaeus* (L), cp. Persoonia 2: 33. 1961, and fig. 21.—SPAIN: Cataluña: Aiguamoix, 25–IX–1934, Singer C 554 (BA).—C 562 (BA).

Hebeloma moseri Sing. spec. nov.—Pileo gilvo, subrubescente-brunneo discum versus, interdum subgriseo-brunneo et albido-marmorato, glabro et nudo, 10–40–(50) mm lato, obtuse conico vel semigloboso, irregulariter flexuoso.—Lamellis dilute cacao-coloribus, tridymis, lamellis integris 40, i.e. distantibus, crassiusculis, ad aciem haud strictis vel suberosis, adnatis. —Stipite dilute griseolo-brunneolo, basin versus fuligineo-brunneo, ad apicem subtiliter fibrilloso-squamuloso, aequali vel basin versus incrassato, 25–30 × (ad apicem) 2.5, (ad basin) 8–(10) mm.—Contexto raphanaceo odore gaudente.—Sporis 12–12.3 × 6.5–6.8 µ ellipsoideo-fusoideis vel ellipsoideis (e basidiis bisporis natis) vel 9–9.5 × 5.3–6 µ, ellipsoideis, sic e basidiis tetrasporis natis, depressione leniter manifesta suprahilari praeditis, ad apicem subacuminatis, praesertim in maximis, callo apicali ornatis, subtiliter punctulatis subasperulisque vel levibus, maximis omnibus levibus, ochraceis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 27–42 × 7.2–8.5 µ, clavatis vel medio constrictis, hyalinis, (1)–2–(3)–4-sporis, pluribus tetrasporis. Cheilocystidiis 42–52 × 7.5–8.7 µ, ampullaceis, in parte inferiore ventricosis, sub apice claviculari 4.5–5.8 µ lato leniter constrictis et ibi 3–3.7 µ diam., hyalinis, numerosissimis et densis. —Hyphis fibulatis.—Ad terram in silva, sub Nothofago dombeyi, frequenter caespitose-fascicularis.—Typus a M. Moser in ARGENTINA, Neuquén, Quetrihué, 15–IV–1963 lectus et in BAFC conservatus est.

The macroscopical description is by M. Moser to whom this species is dedicated since he was the first to collect an undoubtedly native *Hebeloma* in Patagonia. The lamellae are apparently not destilling drops. The taste has not been ascertained. It is not identical with any of the European species or similar to any of the American ones analyzed by me.

HEBELOMA SINAPIZANS (Paulet ex Fr.) Gillet, Hymenomycetes p. 527, 1874.

Pileus gilvous to gilvous white or whitish on margin, the center often tending to be tawny ("tawny" to 11–E–6, M & P), glabrous, naked, smooth, with at first incurved margin, convex, soon becoming flattened to slightly depressed in the center, at times subumbonate, viscid, slightly shining, 30–87 mm broad and rather variable in size as far as South

American material is concerned.—Lamellae gilvous to grayish cinnamon, with white edges, broad, close or subclose, not distilling droplets, deeply sinuate-emarginate or rounded-adnexed. Spore print dull brownish (between "Mango" and 14–B–11, M & P).—Stipe white, entirely white or whitish fibrillose-subsquamulose, in age sometimes becoming pale brownish, generally cylindric but at times somewhat ventricose or with swollen base, not radicant, solid, later stuffed-subhollow or with cavities, 15–60 × 5–20 mm; veil none.—Context white in all parts, unchanging; taste mild but somewhat raphanaceous; odor weakly but undoubtedly raphanaceous.

Spores 10.2–15 × 6–8 μ, mostly 13–13.2 × 7 μ, ellipsoid-fusoid, with or more often without an apical short snout, well pigmented ochraceous-melleous, or pale rusty ochraceous (KOH), with a slight apical callus, with a fine punctation or asperulation of equidistant exosporial dots, these brownish, with a slight suprahilar depression.—Hymenium consisting of basidia and margined by cheilocystidia. Basidia 23–28 × 8.5–11 μ, mostly all 4-spored, more rarely with a few 2–3-spored intermixed.—Cheilocystidia 31–47 × 4.5–11 μ, ventricose both above and below a central or subapical constriction (3.5–5 μ diam.), lower swelling 5–9 μ across, the upper 4.5–11 μ across, sometimes the upper broader than the lower, sometimes vice versa. Pleurocystidia none.—Hyphae with clamp connections, hyaline in the regular hymenophoral trama.—Epicutis—an ixocutis.

Under *Nothofagus dombeyi*, but also introduced trees (e.gr. *Castanea vesca*) on the ground, fruiting in late summer and fall.

Material studied: CHILE: Llanquihue: Salto de Petrohué, 10–V–1967, under *Nothofagus dombeyi* exclusively, Singer M 6840 (SGO).—May 1965 (BAFC).—ARGENTINA: Neuquén: Puerto Manzano, 8–III–1959, under *Castanea*, Singer M 1718 (BAFC).

Aside from these three species, there are also others, that form mycorrhiza with introduced trees and may have been introduced with these. One of the introduced species was determined as *H. australe* Murr. by this author (see Sydowia 8: 134. 1954), another appears to be the same as *H. felipponei* Speg. and *H. lugens* (Jungh.) Kummer (see Lilloa 25: 363. 1952). Still another comes close to *H. testaceum* sensu Kühner & Romagnesi (cf. *H. sterlingii* [Peck] Murr.). All these were found in parks and plantations of foreign trees.

Alnicola

A. amarescens (Quél.) Sing. on burned wood in Neuquén; *A. melinoides* (Fr.) Kühn. with European alders in Bio-Bio, Llanquihue, both adventitious.

SIMOCYBE OLIVACEONANA (Sing) Sing., Sydowia 15: 74. 1961.
Description see Sydowia 8: 136. 1954.

SIMOCYBE PANTELAEODES (Sing.) Sing., Sydowia 15: 74. 1961.
Description see Sydowia 8: 138. 1954.

SIMOCYBE OLIVACEICEPS (Sing.) Sing., Sydowia 15: 74. 1961.
Description see Sydowia 8: 137. 1954.
Material studied: CHILE: Colchagua: Pumanque, W. Lazo PU-66, 29–V–1967 (SGO).—ARGENTINA: Neuquén: Quetrihué, 20–V–1952, Singer M 791 (LIL), typus.—14–V–1952, Singer M 610 (LIL), paratypus.

Simocybe urosphaera Sing. spec. nov.—Pileo subolivaceo vel olivaceo ("whippet" M & P), hygrophano, dehydratatione "khaki" M & P, pellucide striato per medium radium, glabro et levi, subviscido vel humido, convexo, subumbonato, 11–13 mm lato.—Lamellis subolivaceo-umbrinis ("partridge" M & P), sublatis vel latis, haud ventricosis, horizontalibus, subdistantibus, late adnexis vel adnatis.—Stipite pallido, ad apicem subolivaceo, ad basin sordido, sicco, aequali, leniter subexcentrico, 21–23 × 1–1.3 mm; velo nullo.—Contexto tenui, inodoro.—Sporis 7.5–8.5 × 4.3–5 μ, lateraliter reniformibus, levibus, poro germinativo destitutis, callo destitutis, appendice hilari minutissimo et membrana tenui (0.4–0.6 μ) praeditis, ochraceis.—Hymenio e basidiis efformato et cheilocystidiis marginato; pleurocystidiis nullis. Basidiis 19–24 × 5.5–7 μ, urniformibus, ventricosis in parte inferiore, subampullaceis, tetrasporis. Cheilocystidiis 54–60 × 5–7 μ, basi inflatis, apice longe filamentose protractis et ibi 2–2.5 μ, raro usque ad 3.3 μ latis, rarissime bifurcatis.—Hyphis fibuliferis (?), in tramate hymenophorali regulari hyalina latiusculis.—Epicute cellulari, epithelium efformante, haud hymeniformi, hyalina, elementis sphaerocystoideis aut ex hyphis filamentosis natis et simplicibus aut ex sphaerocystibus inferioribus catenulatim ortis, 13–27 × 10–22 μ cc., tenui-tunicatis, nonnullis in parte superiore excrescentia longe effilata (ita ut cheilocystidia), 30–48 × 2–3.5 μ emittentibus, rarius excrescentia crasse tunicata irregularia interdum septata, membrana melleo-ochraceo vel ochraceo-aurea pigmento membranali tincta instructa emittentibus (membrana ± 1 μ crassa). Hypodermio cutem efformante, a tramate pilei vix differentiato.—Ad terram in silvis Nothofagi antarcticae.—Typus a R. Singer (M 3624) in ARGENTINA, Neuquén, Arroyo Frutillas, 28–IV–1964 lectus et in BAFC conservatus est.—*S. pantelaeodi* affinis et forma cheilocystidiorum nec non elementorum

epicuticularium pilei et pileo subumbonato atque lamellis latius adnexis vel adnatis distinguitur.

Simocybe peullensis Sing. spec. nov.—Pileo brunneo-griseo (14–G–6 vel 15–E–6, M & P) hygrophano, dehydratatione pallidiore ("thrush" M & P), e centro marginem versus pallescente, levi, haud pellucide striato, velutino, circumferentia circulari vel ovali reniformi gaudente, convexo, dein centro depresso, 11–12 mm lato.—Lamellis pileo subconcoloribus, (14–E–6, M × P), latiusculis, latioribus prope stipitem, confertis, rotundato-adnexis vel rotundato-subliberis.—Stipite subdilutius tincto quam pileus ("airdale" M & P) velutino, recto vel curvato, excentrico vel centrali, aequali vel rarius leniter apicem versus incrassato, 17–18 × 1–1.5 mm; velo nullo.—Contexto superficiebus pallidiore, rarius concolori; sapore miti; odore nullo.—Sporis 7.5–8.2 × 4.5–5.2 μ, frontaliter visis ellipticis vel raro centro constrictis, lateraliter reniformibus, bene pigmentatis, brunneis, poro germinativo destitutis, levibus.—Hymenio e basidiis efformato, cheilocystidiis marginato. Basidiis 19–23.5 × 6–6.8 μ, tetrasporis. Cheilocystidiis 33–36 × 5–8.5 μ, generatim clavatis vel ventricosis et tunc in parte mediana leniter constrictis, parte basali incrassata vel haud incrassata, densis, hyalinis vel melleo-hyalinis.—Hyphis fibulatis.—Epicute pilei e fragmentis subhymeniformibus vel hymeniformibus interruptis consistente, elementis dermatocystidiodeis erectis vel interdum depressis, e.gr. 16 × 5.8 μ majoribus, cheilocystidiis simillimis efformata, hyalina vel pallide brunneola. Hypodermio cutem latam formante, ex hyphis angustis (2–6 μ latis), partim pigmento subfuligineo incrustatis, partim haud incrustatis efformato.—Ad ramum emortuum Nothofagi dombeyi in silvis.—Typus a R. Singer (M 3189) in CHILE: Llanquihue, Peulla, 25–III–1963 lectus et in BAFC conservatus est.

SIMOCYBE POLYTROPA (Sing.) Sing., Sydowia 15: 74. 1961.

Description see Sydowia 7: 237. 1952. However, it should be taken into consideration that the subtropical material from Tucumán cited with the description l.c. does not appear to be conspecific. It differs in narrower spores (4.2–4.8 μ), mostly subcylindric and up to 7 μ broad cheilocystidia, curved and eccentric stipe and subclose to subdistant lamellae. It has been renamed *S. polytropoides* Sing., Sydowia 15: 74. 1961.

SIMOCYBE CURVIPES (Sing.) Sing., Sydowia 15: 73. 1961.

Pileus melleous-ochraceous, watery ochraceous, hygrophanous, often between striae pallid, fading to whitish-buff or pallid-ocher, transparently striate and/or finely sulculate over three quarters of the radius, subpruinate-silky when fresh and appearing slightly fibrillose under a strong

lens, at first with slightly incurved margin, soon with straight margin, semiglobate, then convex, obtuse sometimes slightly umbilicate, not umbonate, 3–10 mm broad.—Lamellae ochraceous to cinnamon (e.gr. "desert" M & P), subclose to distant, moderately to rather broad, adnate. Spore print ocher ("golden corn" M & P).—Stipe white, or whitish, finely pruinate, equal, curved, central, more rarely eccentric, 6–20 × 0.7–1 mm; veil none, in mature material, but in very young specimens white, floccculose, early and completely disappearing. A serial examination of minute primordia shows that the species is hemiangiocarpous.—Context very thin, inodorous.

Spores 7.2–9.5 × 4.8–5.8 μ, those formed on bisporous basidia reaching 11 × 7 μ, ellipsoid, laterally with less convex to rarely slightly depressed inner side, with smooth, double but not very thick wall, without a callus and a germ pore.—Hymenium consisting of basidia, bordered by cheilocystidia. Basidia 22.5–27 × 6.8–8.3 μ hyaline, 4-spored, mostly some 2-spored ones intermixed. Cheilocystidia 29.5–63 × 4.8–7.2 μ, either clavate and then often the pedicel separated from the terminal cell by a clamp-less (secondary) septum, or versiform, mostly however, subcylindric-ventricose with a constriction near the middle, and then with or without a secondary septum, but also with one of the swellings hardly showing or much slighter than the other, rarely with a neck-like or finger-like appendage or mucro at the tip generally obtuse, thin-walled, hyaline; rarely there is another type of cheilocystidia present which is vesiculose-clavate and sometimes somewhat thick-walled, very scattered and rare, e.gr. 30 × 13.7 μ.—Hyphae with clamp connections, in the regular hymenophoral trama brownish-pallid, some of the elements in older specimens reaching as much as 18 μ in diameter.—Epicutis of the pileus formed by a thin layer of repent or ascending hyphae, many of these ending in in rather scattered or bunched together dermatocystidioid terminal members, these either cylindric or like one of the types of cheilocystidia, i.e. vesiculose, narrowly ventricose and constricted, or clavate, 17–29 × 7–12.3 μ, hyaline, obtuse, the epicuticular layer becoming rather obsolete in older specimens. Hypodermium—a cutis, consisting of pale brownish, elongated, in part very broad elements which are subparallel or parallel with each other, with rather numerous septa, without pigment-incrustations, with often slightly thickened walls, not gelatinized.

On dead wood, rotten chips, fallen rotting branches and bark, often covered by volcanic ashes, mostly on *Austrocedrus chilensis*, but also on *Nothofagus dombeyi* and various Myrtaceae, in loose groups, fruiting in fall.

Material studied: ARGENTINA: Neuquén: Quetrihué, 11–V–1952, Singer M 744 (LIL), typus.—16–V–1952, M 683 (LIL), paratypus.—Isla

Victoria: 17–V–1952, M 693 (LIL), paratypus.—Puerto Manzano, 900 m alt., 8–IV–1963 (BAFC).

SIMOCYBE REDUCTOAFFINIS Sing., Sydowia 15: 71. 1961.
Description see there.–This species was also found in Chile, obviously adventicious: CHILE: Santiago: La Rinconada, on sawdust, W. Lazo RI-13, 17–IX–1967 (SGO).

Phaeomarasmius

PHAEOMARASMIUS CHILIOTRICHI Sing., Sydowia 5: 475. 1951.
Description see Sydowia 7: 255. 1953.

PHAEOMARASMIUS DISTANS (Peck) Sing., Lilloa 13: 83. 1947.
A description of the Patagonian material see Sydowia 8: 141. 1954.

PHAEOMARASMIUS SUBINCARNATUS (Joss. & Kühner) Sing., Schweiz. Zeitschr. Pilzk. 34: 59. 1954, comb. nov.
Naucoria subincarnata Joss. & Kühn. ex Kühner & Romagnesi, Bull. Soc. Nat. Oynnax Mém. hors série, 10—11: 6. 1957.

Var. gilvus Sing. var. nov.—Pileo gilvo (coloris Hebelomatis crustuliniformis) flocculoso-scabro, praesertim sub lente in siccis, in vegetis breviter sulculato, convexo, 2–4 mm lato.—Lamellis concoloribus, distantibus, adnatis.—Stipite concolori, demum magis cinnamomeo-brunneo vel ochraceo-brunneo, flocculoso, 10–15 × 0.2–0.3 mm; mycelio basali albo.—Contexto inodoro.—Sporis 9.5–11.2 × 4.8–6.3 μ, giganteis usque ad 14.5 × 4 μ, elongatis, subcylindraceis, normalibus fusoideis vel fusoideo-ellipsoideis, haud mucronatis, rarius cylindricis vel centro constrictis, sat dilute brunneis (KOH), levibus,-poro germinativo destitutis.—Basidiis 22–27 × 7.2–10 μ, clavatis rarius vesiculoso-ventricosis, tetrasporis, paucis bisporis intermixtis.—Pleurocystidiis nullis. Cheilocystidiis 31–55 × 5.5–9 μ, ampullaceis, ad basin ventricosis, ad apicem paullum vel manifeste subcapitatis vel clavicularibus, sub apice tenuioribus et subcylindraceis, in parte ventricosa interdum constrictis, hyalinis, apice 2.8–5 μ latis, capitulo vel clavicula apicali 4.5–9 μ diam.—Hyphis fibulatis, in tramate hymenophorali regulari brunneolis e pigmento membranali.—Epicute pilei epithelium efformante, cuia elementa sphaerocystidioidea catenulas formant et paucis elementis elongatulis intermixtis alternant, sed plerumque globosa vel subglobosa sunt, omnibus cellulis epicuticularibus hyalinis, incrustatione nulla vel admodum sparsa gaudententubus, tenui-tunicatis,

levibus, membris terminalibus e.gr. 25 × 20 μ, 19 × 11.8 μ, 27 × 6.8 μ, gradatim magis exclusive sphaerocystoideis cellulam basalem versus, catenulis saepe depressis, sed in parte exteriore haud cutiformiter dispositis et nonnullis elementis separatis observatis. Hypodermio magis irregulari, elementis magis elongatis, pigmento brunneo ornatis membranali ita ut hypodermium pallide brunneum evadit.—Ad folia delapsa *Nothofagi dombeyi* gregatim, autumnalis.—Typus varietatis a R. Singer (M 3170) in ARGENTINA, Rio Negro, inter Laguna Frías et Paso de las Nubes, 24–III–1963 lectus et in Herbario BAFC conservatus est.— A var. *subincarnata* colore minus carneo magnitudineque carpophororum reducta nec non cheilocystidiis saepius subcapitatis recedit.

Phaeomarasmius mucronosporus Sing. spec. nov.—Pileo rubido-brunneo (13–B–11, M & P) vel brunneo ("Cochin" M & P), dein pallidius fusco-brunneo ("terrapin" M & P), haud hygrophano, haud striato nec sulcato, sed ex integro tomentoso, tomento dein diffracto ita ut superficies macroscopice in vegetis punctatula, sub lente in siccis verruculoso-squarruloso-floccosa appareat, sicco, campanulato vel convexo, 2–3 mm lato.—Lamellis pileo multum pallidioribus, dilute brunneolis, subangustis vel latis, ascendentibus vel horizontalibus, aut obliquis, subconfertis vel subdistantibus, adnatis.—Stipite aut lamellis concolori in parte superiore et pileo in parte inferiore, aut pileo concolori in parte superiore et demum coffeicolori ("coffee" M & P) in parte inferiore, tomentoso et fibrilloso vel flocculoso, aequali, 6–15 × 0.7–1 mm.—Contexto inodoro.—Sporis 5–7.5 × 4–5 μ, fusiformi-ventricosis et apicaliter characteristice mucronatis, interdum minus convexis ad latus interius vel ellipsoideo-mucronatis vel interdum subglobosis, brunneo-pallidis vel dilute brunneis, sat debiliter pigmentatis et interdum subhyalinis, levibus, membrana subtenui sed haud collabente duplici instructis.—Hymenio e basidiis efformato et cheilocystidiis marginato; pleurocystidiis nullis. Basidiis 17–24 × 5–7 μ, tetrasporis. Cheilocystidiis 20–46 × 3.5–6.5 μ, subulato-ampullaceis, ad basin ventricosis, ad apicem rostratis el longe effilatis, obtusis vel rarius subacutis, hyalinis, ad apicem 1.3–2.2 μ tantum diametro, tenui-tunicatis, interdum brunneolo-hyalino-granulatis e granulis subtilibus incrustantibus, externis.—Hyphis fibulatis, in tramate hymenophorali regulariter dispositis et brunneo-pallidis vel subhyalinis, incrustatione pigmenti brunnei minutissime ornatis.—Epicute pilei e catenulis cellularum et elongatarum et sphaerocystoidearum consistente quae tomentum efformant, his elementis irregulariter mixtis sed in parte inferiore tomenti breviusculis et subglobosis praedominantibus, in parte inferiore multis hyalinis vel subhyalinis, in parte superiore magis coloratis e pigmento incrustante brunneo, nonnullis tenui-tunicatis, sed permultis crasse

(0.5–2 μ) tunicatis, elementis sphaerocystoideis 13–20 × 11–16 μ, elongatis 16.5–30 × 6–15 μ.—Ad ramos emortuos Berberidis et Myrceugenellae in silvis, vernalis et autumnalis.—Typus (M 3955) a R. Singer in Argentina lectus et in BAFC conservatus est.

Material studied: ARGENTINA: Rio Negro: Path from Laguna Frías to the Paso de las Nubes, 4–V–1964, Singer M 3955 (BAFC), typus.—Neuquén: Quetrihué, 11–XI–1966 (BAFC), paratypus.

Phaeomarasmius fuscomarginatus Sing. spec. nov.—Pileo brunneolo-ochraceo (± 12–L–10/11, Maerz & Paul) margine paullum pallidiore, hygrophano, dehydratione a margine centrum versus pallescit usque ad cremeo-albidus, pellucide-striato statu humido, breviter sulcato-plicato vel crenato in adultis, prope marginem extremum linea fibrilloso-flocculosa sepiaceo-brunnea ornato, ceterum macroscopice subglabro vel glabro, sed centro sub lente appresse brunneosquamuloso, convexo dein applanato, 10–16 mm cc. lato.—Lamellis cinnamomeo-alutaceis, acie concolori, sub lente fibrilloso-flocculoso-fimbriatis, subconfertis, mediocriter latis, decurrentibus vel subdecurrentibus.—Stipite margini pilei concolori, fibrillis minutis subsquarrulosis sparsis concoloribus in parte superiore ornato, fibrillis partis inferioris obscurioribus, apice zona annulari fugaci primum ornato, subaequali, ± 23 × 2–3 mm; mycelio basali albo.—Carne in siccis alba, subfragili, in stipite subduriuscula, inodora.—Sporis 6–9 × (3)–4–5.2 μ, ellipsoideis, lateraliter rarius reniformibus, subhyalinis vel pallide brunneolis, membrana subsimplici et guttulis internis exiguis nullis vel compluribus praeditis, levibus.—Hymenio e basidiis formatis et cheilocystidiis marginato; basidiis 23–25 × 6.8–7.2 μ, tetrasporis, paucis bisporis, hyalinis, clavatis; cheilocystidiis dimorphicis: (1) generatim haud pigmentatis, rarius brunneolis, rarius spadiceis pigmenti membranalis causa, quod ad apicem cellulae magis concentratum est quam in parte inferiore, globoso-capitatis et pedicellatis, pedicello cylindrico vel leniter ventricosulo, capitulo globoso 6–11 μ diam., longitudine tota 32–62 μ; (2) generatim fortiter pigmentatis et subcylindraceis vel cylindrico-ampullaceis, sparsioribus, 26–36 × 5–8 μ; pleurocystidiis nullis.—Hyphis tramatis hymenophoralis nec non pilei et hypodermii pilei hyalinis vel pallide ochraceis, fibulatis, subfilamentosis, hic inde pigmento tenuiter incrustatis.—Epicute pilei e catenulis hyphiformibus latis (membris terminalibus e.gr. 30–70 × 4–10 μ) fasciculatis pigmento spadiceo-castaneo subcontinue incrustatis, apice rotundatis vel breviter bifurcatis aut apiculatis et minus pigmentatis, basin catenulae versus etiam minus pigmentatis, fibulatis consistente.—Ad lignum emortuum Dicotyledonum in silva gregatim. Typus (SGO) a W. Lazo lectus prope Pumanque, provinciae Colchagua, Chile no. PU-99, 14–VI–1967.

Phaeomarasmius speireoides (Romagnesi apud Kühner & Romagnesi, ex Romagnesi apud Kühner & Romagnesi, Bull. Soc. Nat. Oyonnax, Mémoire hors série 10–111: 6. 1957, Naucoria) Sing. ex Sing. comb. nov.

Var. **chilensis** var. nov.—Pileo pallide alutaceo vel ochro-alutaceo, centro et vestimento concolori vel ochraceo-brunneo (margine 11–H–6, centro e.gr. "Sudan br." vel "oak"), interdum magis cinnamomeo, vel sordide melleo, macroscopice subglabro sed sub lente scabriusculo e crusta tenuissima minutissime flocculosa, in centro densiore et rivulosa, marginem versus sparsa, dein denudato, et tunc magis manifeste pellucide striato per duas tertias vel tres quarta radii, haud sulcato, convexo, dein applanato vel centro depresso, obtuso, 5–9 mm lato; velo cum strato epicuticulari identico, marginem fugaciter appendiculato.—Lamellis cremeo-alutaceo (pallidioribus quam 10–E–4, M & P), dein subochraceis (e massa sporarum, i.e. 11–F–4, M & P), subangustis vel latis, subconfertis vel distantibus (plus quam 9 lamellae percurrentes praesentes), adnatis.—Stipite ochraceo-melleo vel pallide subcinnamomeo-alutaceo, apicem versus pallidiore, veli fibrillis exceptis glabro, aequali vel ad basin gradatim incrassato, 10–18 × 0.7–1.5 mm; velo subferrugineo-brunneolo, primum e fibrillis 2–3 mm sub lamellis zonam fibrillosam e fibrillis ascendentibus vel linearem formante, annulum persistentem haud efformante; mycelio basali albo, fibrilloso-lanoso.—Contexto exiguo, inodoro.—Sporis 5.3–7–(8) × 3–4.3 μ, ellipsoideis, rarius oblongis, apice obtusis sed apicem versus leniter attenuatis in permultis, applanatione suprahilari praesente vel absente, lateraliter visis interdum latus interius leniter concavum monstrantibus, membrana tenuiuscula, saepe collabente, colore suo eas Tubariae furfuraceae in mentem revocantibus, levibus.—Hymenio e basidiis efformato et cheilocystidiis marginato; pleurocystidiis nullis. Basidiis 18–25 × 5–6 μ, hyalinis, saepe centro constrictis, tetrasporis. Cheilocystidiis 27–45 × 5.3–8 μ, densis, anguste clavatis vel subcylindraceis, interdum una vel duabus constrictionibus ornatis ita ut parte basali et interdum etiam parte mediana ventricose incrassatae appareant, membrana hyalina tenui vel usque ad 0.5 μ incrassata instructis; praeterea alio typo cheilocystidiorum in nonnullis carpophoris praesente, hoc ampullaceo, apice 3–3.5 μ lato et cylindrico praedito, nec ventricoso nec cylindraceo et semper tenuissime tunicato, cheilocystidiis alteri typi intermixto.—Hyphis fibulatis, ita ut sporis inamyloideis, subhyalinis.—Epicute pilei ex elementis opacis (membrana usque ad 2 μ crassa), versiformiter elongatis, incrustationibus pigmenti ferrugineo-brunnei partim ornatis, interdum ramosis vel appendiculatis, catenulatis et ascendentibus vel demum appressis, in vetustis fugacibus, terminalibus e.gr. 27–90 × 4–29 μ, cylindraceis, ventricosis, ampullaceis, fusoideis, etc.,

rotundato-obtusis, rarius subacutis, numquam sphaeroideis efformata.—Ad lignum putridum nec non ad folia tanacia (e.gr. Lomatiae hirsutae et Perseae lingue) in silva, gregatim, rarius solitario, vernalis et autumnalis. —Typus a R. Singer (M 2003) in Chile lectus et in Herbario BAFC conservatus est.

Material studied: CHILE: Llanquihue; Peulla, 22–III–1959, Singer M 2003 (BAFC).—21–III–1959, M 1973 (BAFC), typus and paratypus respectively.—Frutillar, 15–IX–1967, Singer M 7551 (SGO), paratypus.

This differs from var. *speireoides* in somewhat more numerous lamellae and larger size and the habitat.

PHAEOMARASMIUS CILIATUS Sing., Sydowia 7: 250. 1953.

Description see there.

Material studied: CHILE: Valdivia: Cordillera Pelada, Chivería, 7–V–1967, Singer M 6772 (SGO).—ARGENTINA: Tierra del Fuego: Nueva Argentina (Rio Grande), 15–II–1950, Singer M 288 (LIL), typus.—18–II–1950, Singer M 348 (LIL), paratypus.—Neuquén: Lago Correntoso, 11–III–1963, Singer M 3501 (BAFC).—Path to Los Cántaros, 18–II–1960, Singer M 3039 (SGO).

PHAEOMARASMIUS LIMULATELLUS Sing., Sydowia 7: 254. 1953.

Pileus brown ("Alamo", "harvest" to "sayal br." or "sayal br.", "Aztec" to "clay", "topaz", later "mummy", "harvest", "Papyrus", "cognac"), more rarely more ochraceous, somewhat to strongly hygrophanous, fading to cream ocher (e.gr. 10–D–4, M & P), or pale buff, over one third to five sixths of the radius transparently striate or sulculate when fresh, dry smooth or sulculate, glabrous or subglabrous, macroscopically in wet condition, but when seen in dry condition under a lens, the surface is covered by sparse to dense woolly flocculi or a fibrillose or woolly-pilose pruinosity especially on the margin, or even granular-spinulose and connected reticulately by fine fibrous bridges, these scales eventually often pallescent, convex and obtuse and then in dried condition often somewhat umbilicate, or almost subumbonate, or even umbonate, and then likewise with a subumbilicate central depression in the umbo when dried, eventually even in fresh with applanate or shallowly depressed center, 6–35 mm broad; veil at first almost appendiculate on the margin, fibrillose, whitish, then whitish-brownish, but disappearing in older specimens.—Lamellae ochraceous brownish or brown (between "antique bronze" and "cochin" or "sayal br.", "cigarette" M & P), younger either pale cinnamon ("bran") or clay-brownish, moderately broad to broad, tridymous, subclose or close to subdistant, adnexed to broadly adnate, even somewhat decurrent. Spore print fresh

"buckthorn br." (M & P).—Stipe generally paler than the pileus, for example ochraceous with white or whitish apex, more rarely all white, or concolorous with the pileus, finely fibrillose, under a lens coarsely woolly-fibrillose up to an almost annuliform apical velar belt, these fibrils loosely arranged below, but often shaggy-condensed, or appearing pilose, eventually becoming naked and subglabrous, this covering pallid to (especially later) ochraceous to rusty, hollow or soon becoming so, straight or curved, central or slightly eccentric, subequal or tapering downwards, 9–35 × 1–2 mm; veil after breaking leaves the strong fibrillose and often subannulate covering on the stipe, at first pallid or pale brownish, later deeper brownish, the youngest pecimens showing a pallid cortina connecting the pileus with the apex, annulus rather fagucious; basal mycelium white.—Context hygrophanous, thin, inodorous.

Spores (6)–7–12.3–(13.8) × 5.2–7 μ[1]), short ellipsoid to ellipsoid, ovoid or obovate, broadly fusoid-ellipsoid, not or slightly lentiform (in this case e.gr. 7.3–8.5 × 5.2–6.5 × 4.5–5.2 μ), whit somewhat convex or applanate to slightly depressed-concave inner side, or only with suprahilar applanation when seen laterally, often with numerous small oil droplets, on in other preparations, normally with one globose or subglobose oil drop, wall sometimes easily collapsing, light ferruginous, cinnamon brownish, light brownish, moderately to well pigmented, with double but not very thick wall, smooth.—Hymenium consisting of basidia and bordered by cheilocystidia; pleurocystidia none. Basidia 26–33 × 6.5–8.5–(9.5) μ, 4-spored, hyaline, mostly clavate. Cheilocystidia 16.5–69 × 3–16 μ, versiform, mostly basidiomorphous or filamentous, very frequently with claviculate, somewhat swollen apex, or with a subcapitate apex, but also ampullaceous with a cylindric apex, very frequently with a slightly to distinctly ventricosely swollen basal portion which may be narrower or broader than the apical swelling (if such exists), rarely narrowly fusoid, always broadly rounded at the tip, thin-walled, hyaline, making the edges heteromorphous, eventually often connivent in fascicles. —Hyphae with clamp connections, in pileus trama thinner than in epicutis, radially arranged and ochraceous to pale ochraceous, in the hymenophoral trama regularly arranged, 3–8 mm diam., ochraceous hyaline or stramineous, elongated to thin-filamentous, some hyphae with a slight but distinct, thin pigment incrustation, not gelatinized.—Epicutis of pileus represented by the covering of the pileus, consisting of a not

[1]) Generally, the spores were found to be 7–10.2 μ long and up to 6.2 μ broad; only in collection M 4024 which is also the largest, as far as fruiting body size is concerned, the spores measured (7)–9–12.3–(13.8) × (5)–5.5–7 μ. The basidia were exclusively 4-spored in this as in all other collections. This may be a variety.

very densely packed trichodermium of hyphal chains, the elements of these chains not spherocystoid, but elongated, in the lower layer often broader than in the upper, the terminal members 16–52 × 4–16 μ, the walls mostly thick (1.2–2 μ), in few members thinner (0.5–1 μ), incrusted heavily by a brown pigment, only the cell before the terminal one, rarely subisodiametric, rarely the terminal one bifurcate, generally with rounded tips, the pigment often spirally or coarsely granularly distributed. The covering of the stipe shows a similar structure.

Development of the carpophores: Hemiangiocarpous.

Chemical characters: $FeSO_4$ on surface of pileus: gray.

On earth as well as on cones and living and dead wood (*Nothofagus, Saxegothaea*) and on evergreen leaves, fruiting from spring until fall, also in winter.

Material studied: CHILE: Maule: Molco, 4–VIII–1967, Singer M 7220 (SGO).—ARGENTINA: Rio Negro: Path from Laguna Frías to the Paso de las Nubes, 24–III–1963, Singer M 3163 (BAFC).—Puerto Blest, 23–III–1963, Singer M 3144 (BAFC).—Laguna Frías and up to 2 km north, 24–III–1963, Singer M 3177 (BAFC).—18–XI–1964, Singer M 4024 (BAFC).—13–III–1959, Singer M 1768 (LIL).—Tierra del Fuego, Estancia Nueva Argentina (Rio Grande), 22–II–1950 (LIL), typus.

Horak, Darwiniana 14: 360. 1967, identifies this with one of the Patagonian species of *Cortinarius, C. hookeri*, of Spegazzini's (BAFC). It is however, very probable that Spegazzini called our fungus *Flammula compernis* (Fr.) Sacc. (see Spegazzini, Mycetes Chilensis, Acad. Nac. Cordabo 25: (15). 1921), possibly rightly so, but the descriptive data published by Montagne under *Agaricus curvipes* are insufficient to prove the point, as are the descriptive data by Spegazzini and Horak which, although they strongly suggest *Phaeomarasmius limulatellus*, may also apply to some other species, such as *P. rostratus*. Unless new data, possibly derived from holotypical or topotypical material, provide more convincing evidence, we shall continue to call our species *P. limulatellus*.

Phaeomarasmius myrceugenellae Sing.—Pileo obscure castaneo-ferrugineo-brunneo ("Maracaibo", Maerz & Paul), hygrophano, dehydratatione usque ad cupreo-brunneum ("copper br." M & P) vel subferrugineum ("Formosa", "ferruginous" M & P) pallescente, plus minusve pellucide striatulo, haud viscoso, macroscopice subglabro sed sub lente in statu sicco tenuiter lanoso, demum subglabrescente convexo, dein applanato vel centro depresso, umbone praedito vel destituto, 8–26 mm lato.—Lamellis pileo subconcoloribus vel ferrugineis ("Maracaibo", "henna", "chutney" M & P), confertissimis vel subconfertis, plerumque confertis, subangustis vel modice latis (usque ad 3 mm latis), adnatis

demum interdum a stipite separatis.—Stipite ochraceobrunneo vel ochraceocastaneo ("mango", "chutney" M & P), ad apicem pruinate vel lanoso, ut minime sub lente, interdum glabrescente, basin versus leniter angustato vel aequali, 12–24 × 1–2 mm; velo sparso vel nulli in adultis. —Sporis in masa ochraceobrunneis ("raw sienna", M & P), sub microscopio (5)–6–7.5 × 4–5.5 μ breviter, ellipsoideis vel ovoideis, lateraliter visis ad latus interius minus convexis vel depressis, bene pigmentatis ochraceobrunneo vel ochraceofusco, membrana firma, levi, moderatim crassiuscula praeditis, poro germinativo destitutis.—Hymenio e basidiis formato et cheilocystidiis marginato; basidiis 15–25 × 6–7.3–(9) μ, tetrasporis; cheilocystidiis 39–66 × (2.5)–3–12 μ (ad basin), × 2–3.5–(5) μ ad apicem), filamentosis sed frequenter ad basin incrassatis et ventricosis, longe effilatis et ad ipsum apicem interdum subcapitatis (usque ad 4.5 μ diam.) semper obtusis; acie lamellarum heteromorpha; pleurocystidiis nullis.—Hyphis in hymenophora regulari elementis saepe brevibus et voluminosis consistentibus, 6.5–18 μ latis, pigmento brunneolo saepe incrustatis, fibuligeris.—Epicute pilei (strato lanoso) e trichodermio formato quod ex catenulis hypharum intertextarum latarum (usque ad 4–24 μ latarum) elongatarum (raro isodiametricarum) consistit et pigmenti incrustatione in nonnullis elementis brunneolum evadit; inter a elementa nonnulla cystiformia visa, cheilocystidiis simillima.—Ad truncum Myrceugenellae nec non Aextoxici et possibiliter Peumi in silvis amycorrhizicis; typus (SGO) a R. Singer lectus prope Hueycolla, provinciae Valdivia, Chile, 1–V–1967, no. M 6581.—Paratypi: M 699 (BAFC), Isla Victoria, Lago Nahuel Huapí, prov. Neuquén, Argentina, leg. Singer; PU-111, Pumanque, prov. Colchagua, Chile, leg. W. Lazo.

PHAEOMARASMIUS ROSTRATUS Sing., Sydowia 7: 252. 1953.
Description see there.

Phaeomarasmius confragosuliformis Sing. spec. nov.—Pileo brunneo ("hazel" M & P) characteristice per medium radium pellucide striato et in siccis manifeste radiatim striato striis obscurioribus sed haud sulcato, minute furfuraceo sub lente in centro, sed in vegetis humidis subglabro, subhygrophano, convexo, saepe subsemiglobate, 7 mm cc. lato.—Lamellis pileo concoloribus, latis, subdistantibus, adnatis.—Stipite pileo concolori, subglabro, exannulato, aequali, 22 × 1.5 mm cc.—Contexto tenui, inodoro.—Sporis 6.5–9.2 × 4.8–5.8–(6) μ, ellipsoideis vel plerumque breviter ellipsoideis vel ovoideis, lateraliter visis latus interius minus convexum vel applanatum, immo leniter depressum monstrantibus, bene pigmentatis, poro germinativo destitutis, haud mucronatis, levibus.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 21–24

× 6.5–7.3 μ, tetrasporis. Cheilocystidiis 15–47 × 6–10 μ, versiformibus, plerumque ampullaceis, apice longo vel rarius brevi cylindraceo vel subcylindraceo 2–4.5 μ lato, sed saepe subcapitato vel capitato (capitulo usque ad 8 μ lato) ornatis et tunc inter capitulum et parte inferiore ventricosam constrictis, hyalinis sed interdum ad basin brunneolis, acie heteromorpha.—Hyphis fibulatis.—Epicute pilei e catenulis elementorum elongatorum 18–37 × 6–15 μ, efformato; his subinde, subhyalinis, aliis pigmento brunneolo granulatim incrustatis, membrana moderatim vel sat crassa praeditis, membris terminalibus frequentius brevibus, breviter fusiformibus vel subsphaerocystoideis, 20–30 × 15–16 μ, nonnullis autem elongatis, omnibus rotundato-obtusis.—Ad lignum emortuum, solitario vel subgregatim, autumno.—Typus a R. Singer (M 6773) in Chile lectus et in BAFC conservatus est.

Material studied: CHILE: Valdivia: Cordillera Pelada, Chivería 7–V–1967, Singer M 6773 (SGO), typus.—Colchagua: Pumanque, 29–V–1967, W. Lazo PU-56 (SGO).

→ **Rozites** and **Cortinarius**

These genera have been treated by M. Moser and E. Horak in a monograph which is about to appear in Beihefte zur Nova Hedwigia. These authors dispose of our entire material collected in the South American woods since 1950, and there is no necessity to publish a parallel treatment here.

Gymnopilus

GYMNOPILUS PURPURATUS (Cooke & Mass.) Sing., Lilloa 22: 561. 1951.

Pileus with the appearance of *Tricholomopsis rutilans,* "carbuncle" (M & P), eventually more red brown, with very small erect scales which vary from so dense that the surface appears tomentose rather than squamulose to quite scattered, especially in age, not viscid, convex, obtuse or subumbonate, and then sometimes with a slight umbilicus in the center, 20–50 mm broad.—Lamellae yellow ("Nankeen" to "primrose"), eventually with the orange-rusty spores powdery, and then ferruginous, medium broad, slightly crenulate, close, rounded-adnexed.—Stipe "Brazil br." (brown-red) covered only by some fibrils or subtomentose to subglabrous, innately costate in most except for the velar zone, equal or subequal, 25–55 × 3–9 mm; veil cortinoid but rather thick and coherent, forming a subannular strictly apical zone which tends to be dusted by the

spores.—Context purple, the purplish color eventually often disappearing, fleshy, developing in most specimens blue ("pan" M & P) spots or areas along the surface where these have been touched or scratched. Odor none. Taste bitter, varying from moderately to strongly so, even in dried condition.

Spores 8–9–(11) × 4.8–5.5–(6) μ, ellipsoid, with or without a suprahilar depression, with a deep rusty verrucose exosporial ornamentation on slightly paler ground, verrucose in circumference, without plage and without a germ pore.—Hymenium of basidia, bordered by a broad rim of cheilocystidia. Basidia 16–31 × 7–9.3 μ, the larger ones with often thickened walls, hyaline or yellowish, constantly 4-spored. Cheilocystidia 20–45 × 3.8–7.5 μ, ventricose below, with a narrow (1–3.5 μ) neck below an apical capitulum, capitulum 3.5–7.3 μ, with rather firm but not thick wall, mostly resinously incrusted and deep fulvous-brown, more rarely not incrusted and hyaline, or yellowish, and then usually narrower, aside from this there are also yellow vesiculose and often pedicellate bodies, 15–18 × 7.5–9 μ, present, which are probably pseudoparaphyses.—Hyphae with clamp connections.—Epicutis of pileus: The scales consist of bunches of parallel hyphae which are often ochraceous incrusted and also show a brown dissolved intracellular pigment, often constricted at the septa, remarkably broad: (8)–12–27 μ in diameter.

On dead trunks of *Aextoxicum punctatum*, the type on tree ferns, gregarious, also on other woody matter, fall and winter.

Material studied: CHILE: Llanquihue: Ensenada, 11–V–1967, Singer M 7080 (SGO).—10 km south of Colaco, 9–V–1967, Singer M 6808 (SGO).—Valdivia: Hueycolla, 1–4–V–1967, Singer M 6580 (SGO).—ENGLAND: Kew Garden, typus (K).—This was also collected in Pumanque, Colchagua, Chile, by W. Lazo.

This is quite different from the other two red species, in colors as well as in the bluing of the surfaces which, however, is not fully constant. The material from Hueycolla was very ample, and was analyzed by Dr. Cassels, Santiago, Chile, who encountered an indolic alcaloid, so it may be the same pigment that forms by the oxidative dissociation of the psilocybin molecule. The species is probably hallucinogenic. Hallucinogenic properties have also been observed in another species of this genus, in the United States, a species identified as *G. spectabilis*. However, this identification is not correct since this species is currently eaten in Argentina and Uruguay, and does not provoke hallucinogenic effects.

GYMNOPILUS SPECTABILIS (Fr.) Sing., Lilloa 22: 561. 1951.

Ssp. pampeanus (Speg.) Sing., Lilloa 23: 222. 1951.

A description of this subspecies see Singer, l.c.

Gymnopilus aff. **ventricosus** (Earle) Sing. comb. nov.

Pholiota ventricosa Earle, Bull. N. Y. Bot. Gard. 2: 341. 1902.

Pileus orange-ferruginous, areolate-subsquamulose in center, slightly radially cracking, also rimulose-subsquamulose, not viscid, convex, obtuse, about 51 mm broad.—Lamellae yellow, eventually rusty brown, broad, close, sinuate.—Stipe yellow at apex, rusty fibrillose on ochraceous ground below, the fibrils appressed but coarse, dusted by the spores, annulate, equal, short, 22–23 × 13 mm; annulus well formed and persistent, fibrous, spore dusted, apical, narrowly infundibuliform.—Context yellow, bitter but moderately so, in the base of the stipe somewhat darkening.

Spores 7–9 × 5–5.8 μ, ellipsoid, without germ pore and plage, with a deep cinnamon ferruginous verrucose exosporial ornamentation but the warts scarcely projecting.— Basidia 24–33.5 × 6–7.5 μ, 4-spored, yellow, rarely rusty, constricted. Cheilocystidia of two kinds, (a) short, ampullaceous or aampullaceous and subcapitate (relatively rarely so, and never distinctly capitate), more rarely cylindric to subfilamentous or ventricose-subfusoid, 26–30 × 4.5–7.5 μ, (b) long, some without, most with a slight basal ventricosity and narrowed obtuse apex which is rarely appendiculate, 38–60 × 2.5–4.5 μ. Pleurocystidia very scattered and much like the cheilocystidia, but rare. The entire section is deep lemon from a granular intercellular pigment, dissolving in KOH.—Hyphae wit clamp connections.

On trunks in forest without *Nothofagus*, rare, fruiting in fall.

Material studied: CHILE: Valdivia: West slope of the Cordillera Pelada at 420 m. 7–V–1965, Singer M 5565 a (BAFC).

Gymnopilus excentriciformis Sing. spec. nov.—Pileo ferrugineo-fulvo-brunneo, levi, subtomentoso vel tomentoso vel minute punctiformiter squamuloso, sicco, ad latus angustius insico vel integro, convexo, interdum subumbilicato, 29–37 mm lato.—Lamellis flavis, dein ferrugineis, latis, confertis, adnatis.—Stipite pallide innate fibrilloso ex integro, aequali vel apicem versus attenuato, frequentius excentrico, rarius centrali, sicco, 22–27 × 5–6 mm; velo primum subannuli formi, sed interdum fugaci.—Contexto superficiei concolori vel subconcolori sed in stipite fulvo, amaro. —Sporis 8–10.3 × 5–6.3 μ, plerumque 8.5–9.5 × 5.5 μ, ellipsoideis, asperis ex ornamentatione exosporiali vel rucosa projiciente, verrucis saepe catenulatim dispositis, ferugineo-brunneis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis tetrasporis. Cheilocystidiis 35–40 × 5 μ, ampullaceis, subtus leniter vel manifeste ventricosis, apice longa, rarius capitato praeditis.—Hyphis fibuligeris.—Ad truncum Eucryphiae in silvis.—Typus (M 6805) a R. Singer et in SGO conservatus est.

Gymnopilus chilensis Sing. spec. nov.—Pileo flavo (10–L–3, M & P), aureo-ochraceo ("nugget") in centro, subglabro, minute subtiliterque radiatim fibrilloso fibrillis appressis, praesertim in zona marginali, haud squamuloso vel squarruloso, sicco, convexo, obtuso, 51–59 mm lato.—Lamellis citrinis (9–L–2), siccis intense ferrugineis acie flava, sat latis, ferrugineo-maculantibus tactu, confertis, rotundato-adnatis.—Stipite lamellis concolore, ad apicem e velo sparse fibrilloso, demum innate fibroso, exannulato, solido, in parte inferiore ventricoso, 34–42 × 10–14 mm, ad apicem 8–10 mm diam.; velo sparso, fibrilloso, subfugaci, haud annuliformi.—Contexto flavo, in stipite et tramate lamellarum plus minusve brunnescente, carnoso, in stipite subduro, amaro.—Sporis 7.5–8.8 × 5–6 μ, ellipsoideis, ferrugineo-ochraceo-brunneis, manifeste verrucosis ex ornamentatione forti exosporiali.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis (15)–28–30 × 7.5–8.5 μ, hyalinis vel citrinis, tetrasporis. Cheilocystidiis numerosis, 23–45 × 5.5–6.5 μ, ampullaceis, subtus ventricosis, ad apicem interdum clavicullariter incrassatis, sed frequentius haud incrassatis, obtusis, haud capitatis.—Hyphis fibulatis.—Epicute pilei ex elementis admodum elongatis vel breviusculis et latis efformata, his 10–19 μ latis, flavis vel incrustatione ferrugineo-fulvo resinaceo tinctis. Hyphis oleiferis praesentibus.—Ad truncum delapsum frondosum in silvis.—Typus a R. Singer (M 6679) in CHILE, Valdivia, Hueycolla, lectus, 4–V–1967, et in SGO conservatus est.

GYMNOPILUS AMARISSIMUS Murr., Mycologia 33: 280. 1941.

Pileus rusty fulvous brown, ochraceous brown ("Burma", M & P, 12–J–8; M & P, brighter than "vinaceous russt" and "ferruginous", Ridgway, "Sanford's brown" Ridgway), at times with yellow ("light orange yellow" to "cadmium yellow", Ridgway) ex often glabrous or subglabrous in the center, but more often finely fibrillose when young and more or less glabrescent or covered by spore masses in age, finely appressedly fibrillose or fibrillose-tomentose or with tomentose stripes, and slightly cracking into minute areolate areas or coarsely rismose in the marginal area, not viscid, not hygrophanous (or exceptionally slightly so in the extreme margin), with strongly involute or inflexed margin when young, never striate or sulcate, convex, rarely campanulate, when young, soon obtusely convex, more marely subumbonate or even umbonate, eventually slightly depressed in the center or around the umbo (if such is present), or applanate, 30–60 mm broad.—Lamellae at first yellow to ochraceous ("yellow ocher" to "Antique gold" M & P, "antimony yellow" to "ochraceous buff" Ridgway), becoming bright orange-rust, narrow to broad (3–8 mm), more often broad and ventricose, close or subclose, sinuate-adnate or adnate, or adnexed, often with a decurrent

tooth. Spore print bright (orange-) ferruginous.—Stipe pallid or at least much paler than the pileus, rarely with some yellow, especially above, turning brown from the base upwards and often also where handled, fibrillose from veil and eventually innately coarsely fibrous, veil fibrils soon disappearing and not leaving an annulus, sometimes vaguely pruinate at extreme apex, solid, then stuffed, equal or tapering upwards, more rarely tapering downwards, 40–60 × 4–12 mm, central or slightly eccentric; veil pallid to palest yellowish, cortinoid, fibrillose, appearing as fibrillose coating on the extreme margin of the pileus and the apex of the stipe in young specimens, fugacious.—Context pallid or pale yellowish, mostly becoming more yellow in pileus and more brown in the stipe when old (the stuffing often remaining pallid, turning brown when bruised, but not constantly so. Taste distinctly to very strongly bitter. Odor none or very slight.

Spores 7.7–11.5 × 4.3–7 μ, mostly 8–10 × 5.5–6 μ, strongly and distinctly but lowly punctate by the exosporial ornamentation, more rarely higher-verruculose so that the circumference (in optical section) appears warty, sometimes both subsmooth and coarsely warty spores in the same preparation, ornamentation bright rusty brown on light brownish yellow or yellowish ground, ellipsoid, fewer ellipsoid-subamygdaloid, without germ pore and plage.—Hymenium: Basidia 27–35 × 6.5–8.5 μ, 4-spored. Cheilocystidia making the edge heteromorphous or subheteromorphous, 25–50 × 4–10 μ, ampullaceous, but a variable proportion having the tip of the apex (apex 12–23 μ long and 2–4.5 μ broad) swollen subcapitately or claviculately (broadening reaching 5.8 μ wide), never predominantly capitate, only the brown resinous-incrusted ones tending to have a majority of swollen tips, the non-incrusted ones hyaline to yellowish. Pleurocystidia none, but some of the cheilocystidia pass over onto the sides of the lamellae in some specimens where they are scattered to rare.—Hyphae with clamp connections, nowhere gelatinized.—Epicutis of pileus of radial hyphae which are non-gelatinized, many of them strongly incrusted by a brown-rusty resinous incrustation, with rounded tips, very broad: 4–24 μ diam.

Chemical characters: NH_4OH on pileus fuscous black, then black.—KOH on pileus deep red-brown, becoming black where the pileus is dusted with spores.

On logs and stumps, also on scattered chips, mainly of coniferous hosts, such as pine, *Fitzroya*, *Saxegothaea*, fruiting in late fall, in Florida also in spring and winter.

Material studied: CHILE: Llanquihue: 10 km north of Colaco, 9–V–1967, Singer M 6806 (SGO).—2 km west of Puerto Pargay, 9–V–1967, Singer M 6829 (SGO).—Valdivia: Mirador, 1000 m alt, 29–IV–1967

(SGO).—U.S.A.: Florida: 1 km north of Paradise, Alachua Co., in low hammock on pine, 16–I–1943, Singer F 1729, F 1729 a, (FH).—Magnesia Springs, 12–IV–1938, Murrill F 16206 (FLAS), typus.—Numerous other collections from Florida by both Murrill and Singer.

This species is close to *G. sapineus* and *G. excentriciformis*, differing from both, from the first in less scaly pileus and larger spores, from the latter in less developed, never annuliform veil and at the same time eccentric stipe and heavily ornamented spores not constantly occuring together.

Murrill's type is described as subviscid, and glabrous, probably because of the sticky spore covering of some of the pilei. The pileus has no gelatinous epicutis and the spores are not smooth as described by Murrill.

Galerina

Galerina pucarensis Sing. spec. nov.—Pileo brunneo ("Yucatan", "raw sienna"), inter strias alutaceo ("buff" M & P), hygrophano, glabro, haud viscido, convexo dein applanato, 16 mm cc. lato.—Lamellis ochraceis (subpallidioribus quam "samovar" M & P), mediocriter latis, subconfertis, sinuatis.—Stipite pallide et obtuse brunneolo (pallidiore quam 11–H–7, M & P), per 8 mm apicales pruinoso, aequali, 35 × 1 mm cc.—Contexto tenui, inodoro.—Sporis 8.3–10.2 × 4.3–6 μ, ovoideo-amygdalinis vel subellipsoideis, sed admodum asymmetricis, pallide vel ferrugineo-brunneo-punctatis, disco levi superhilari haud limitato.—Hymenio e basidiis efformato, cheilocystidiis marginato. Basidiis 31–32 × 9–10 μ, hyalinis, paucis brunneolis, defibulatis, (2)–4-sporis. Cheilocystidiis 20–35 × 6–7 μ, ampullaceis, ventricosis (6–7 μ diam.) in parte inferiore, apice 1.6–3 μ diam. et plerumque extaliter incrassato—subcapitulato vel capitulato (capitulo 3–7 μ diam.) ornatis, hyalinis.—Hyphis pilei nec non tramatis hymenophoralis regularis pigmento ferrugineo-brunnescente incrustatis, defibulatis, haud gelatinosis.—Epicute pilei cutiformi, ex hyphis tenuibus repentibus haud gelatinosis efformata.—Ad muscos in silva nothofaginea (*N. alpina, obliqua, dombeyi*) solitario, vernalis.—Typus a R. Singer in ARGENTINA: Neuquén, Pucará (Lago Lácar) 6–XI–1966 lectus et in BAFC conservatus est (M 6023).

Dermatocystidia in pileo desunt; in centro stipitis adsunt, cheilocystidiis simillima, 15–56 × 5–10 μ, collo 1.5–4 μ, capitulo 3–8 μ diam., rarius ventricosa, vesiculosa vel decapitata. Absentia umbonis papillaeque et dermatocystidiorum pilei, sporis pro ratione parvis nec non fructificatione vernali distinguitur.

Galerina berteroana Sing. spec. nov.—Pileo flavo-brunneo vel brunneolo-ochraceo, haud viscido, hygrophano desiccatione in vivo ochraceo-albido, pellucide striato per 1/2 vel 3/4 radii, glabro, convexo, umbonato vel papillato, rarius obtuso, 7–11.5 mm lato.—Lamellis ochraceo-flavis vel dilute brunneo-ochraceis, mediocriter latis vel latis, horizontalibus, subdistantibus vel distantibus, saepe arcuatis, adnatis vel subdecurrentibus.—Stipite albo vel pallide ochraceo, demum interdum dilute brunneolo ad basin, toto subtiliter pruinato-pubescente in vegetis, demum glabrescente, filamentoso vel leniter apicem versus gradatim attenuato, 26–43 × 1–2 mm; velo nullo, immo in juvenilibus.—Contexto tenui, inodoro.—Sporis 9.5–11.7–(13) × 4.7–5.8 μ, inaequilateralibus, ellipsoideo-oblongis, laterilater interdum reniformibus, subtiliter punctulatis, ornamentatione tenuissima exosporiali saepe sparsa, dilute vel pallide ferrugineo-ochraceis (KOH), circumferentia vix asperulata, disco levi suprahilari haud limitato, poro germinativo nullo, depressione suprahilari frequentissime fortiter evoluta, membrana mediocriter crassa.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 27–34 × 7–9 μ, (2)–4-sporis vel omnibus tetrasporis, interdum perpaucis 3-sporis intermixtis, clavatis. Cheilocystidiis 21–44 × 5–9.5 μ, ventricosis, apice sub capitulo constrictis (1.5–4.5 μ diam.), capitulo 2.3–8.5 μ diam., hyalinis, defibulatis.—Hyphis defibulatis.—Epicute cutiformi, haud gelatinosa, saepe hyphis granulatione pigmenti incrustantis prope septa ornatis, filamentosis et membrana hyalina praeditis efformata; dermatocystidiis in juvenilibus et vetustis nullis; hypodermio magis pigmentato. Dermatocystidiis per totam stipitis superficiem numerosis 32–58 × 4–13.5 μ, collo 1.5–5.7 μ crasso, capitulo apicali 4–10 μ diam., saepe fasciculariibus, tenui-tunicatis, hyalinis, cheilocystidiis similibus.—Tramate hymenophorali regulari, hyalino.—Ad et inter Funarias (berteroanas), locis adustis, gregatim, rarius solitario, autumno. —Typus (M 3998) in BAFC sonvervatur.

Material studied: ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza,, on one to two year old fire places in the forest, 6–V–1964 Singer M 3998 (BAFC), typus.—27–IV–1965, Singer M 5316 (BAFC), paratypus.

This species is typical for burned over places after 1–2 year old forest fires, and seems to be strictly associated with *Funaria*.

GALERINA HETEROCYSTIS (Atk). Smith & Sing., Sydowia 11: 447. 1957.

Description and illustrations see Smith & Singer, Galerina, p. 34–35. 1964.

Galerina montivaga Sing. spec. nov.—Pileo melleo-ochraceo vel dilute ochraceo-brunneolo ("spruce y" vel 13–K–9, M & P), frequenter pallidiore

inter strias, hygrophano, pallescente usque ad alutaceum pallidum, saepe zona vitrea circum centrum vel ad centrum gaudente, haud viscido, per medium radium vel longius pellucide striato in adultis, rarius vix striatello, in siccis frequenter leniter sulculato, velo excepto glabro et nudo, haud viscido, convexo-campanulato vel convexo papillato vel umbonato vel raro subumbonato, mox applanto circum umbonem vel, in campanulatis, numquam applanato, 5–10 mm lato, minus vel aequaliter alto; velo primum fibrillis sericeis marginem extremum obtegente vel leniter appendiculato in margine juvenili recto, pallido, rarius nullo.—Lamellis dilute brunneolo-ochraceis vel ochraceis (e.gr. 11–G–5, M & P), ascendentibus vel subhorizontalibus, dein horizontalibus, saepe ventricosis, moderatim latis vel frequentius latis, subdistantibus vel distantibus, rarius subconfertis vel confertis, tenuibus, rotundato-adnexis vel adnexis, aut frequentius adnatis.—Stipite pallido, frequentius ad basin brunneolo (e.gr. "bure" M & P) in adultis, aut pallide brunneolo et ad basin pallido, ad apicem pruinato demum glabrescente, sub apice sericeo e veli fibrillis, demum subglabrescente, interdum ex toto fibrilloso-pubescente e velo, aequali vel apicem versus attenuato, 12–38 × 0.6–1.8 mm; velo pallido, rarius brunneolo-pallido, in juvenilibus cortinam formante, deinde sub apice stipitis sericeo-fibrilloso vel sericeo-pubescente vel sericeo-subflocculoso, haud annulari.—Contexto inodoro.—Sporis 7.8–12.5 × 4.3–6.8 μ, inaequilateralibus, ad interius latus saepe applanatis vel concavis, ellipsoideis vel ovoideis vel oblongis vel oblongo-subamygdaliformibus, subtiliter et plerumque regulariter vix vel paullum obscurius punctulatis vel subtiliter verruculosis, sublevibus, raro circumferentia subasperulata gaudentibus, disco levi suprahilari haud limitato, membrana moderatim crassa instructis, poro germinativo destitutis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 23–41 × 6.8–10.2 μ, clavatis, nonnullis ad apicem attenuatis, (2–3)–4-sporis, ad basin defibulatis. Cheilocystidiis 23–45 × (4)–7–11 μ, ventricosis, sub capitulo apicali constrictis, capitulo 4–7.5 μ lato, constrictione 2–6 μ diam., frequenter subcapitulatis vel clavicularibus tantum ad apicem, sed rarius vel perraro sine apice incrassato, hyalinis, defibulatis.—Hyphis defibulatis, in tramate hymenophorali regulari hyalinis vel brunneolis, haud gelatinosis.—Epicute pilei cutiformi, haud gelatinosa, hyalina, vel nonnullis hyphis prope hypodermium pigmento ferrugineo incrustatis; dermatocystidia omnino desunt. Pruina apicis stipitis e dermatocystidiis efformata, dermatocystidiis stipitis numerosis, cheilocystidiis forma sua simillimis, 30–70 × 7–11 μ, capitulo 5.5–7.5 μ diam., hoc interdum absente, centrum stipitis versus admodum sparsis vel absentibus, in parte inferiore stipitis nullis. Velo ex hyphis elongatis, nonnullis pigmento brunneo-incrustatis efformato, membro terminali interdum piliformi, 2–5 μ lato.—Ad et inter

muscos super terram, lapides, truncos, generatim gregatim crescentes, aestivales vel autumnales.—Typus (T 3161) a. R. Singer lectus et in LIL conservatus.

Material studied: CHILE: Valdivia: Hueycolla, 4–V–1967 (SGO).—Cuesta Santa Elvira, 18–V–1967, Singer M 6563 (SGO).—ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 27–IV–1965, Singer M 5322 (BAFC).—Tucumán: Tafí del Valle, 2200 m alt., 15–I–1950, Singer T 884 (LIL).—2100 m alt., 12–XII–1958, Singer T 3161 (LIL), typus.

This is the var. B of *Galerina heterocystis*, described in Smith & Singer, *Galerina*, p. 38, 1964. It is characterized by the constant absence of dermatocystidia on the pileus even on the margin and in young fresh specimens, by the somewhat smaller spores than are generally found in *G. heterocystis*, the well developed veil, and the low but regular punctation of the spores. Only one of our collections (M 6563) has slightly asperulate spores with verruculose ornamentation. It may belong in some other species.

It remains doubtful whether this species is autonomous or rather a variety of *G. heterocystis*. We propose it here as a separate species since in our territory (the mountains of North Argentina and the lower regions of the south) it is quite constant.

GALERINA PRAETERVISA Sing. in Smith & Sing., Mon. Galerina, p. 352, 1964.

Description see there. The spores are 9.5–12 × 5.5–8.2 μ, sometimes some bisporous basidia may be found to be intermixed in the four-spored majority, and it grows not only on wood but also on mossy earth banks. The specimens collected on the latter habitat were smaller: Pileus 4.5 × 4.5 mm, stipe 14 × 1.5 mm.

Material studied: CHILE: Valdivia: West slope of Cordillera Pelada, 6–V–1965, Singer M 5544 (SGO).—ARGENTINA: Neuquén: Rincón, 18–III–1963, Singer M 3064.

GALERINA RADICELLICOLA Singer, l.c. p. 353.

Description see there.

GALERINA ANTARCTICA Sing., Contrib. Inst. Antárctico Argentino 71: 13. 1963.

Description and illustrations see there.

GALERINA AUSTROCALYPTRATA Smith & Sing., Mon. Galerina, p. 82, 1964.

Var. *AUSTROCALYPTRATA*. Description see there.

Var. *OLIVACEOLAMELLATA* Sing. in Smith & Sing., l.c. p. 83.
Description see there..

Galerina glebarum (Berk.) Sing. comb. nov.
Agaricus glebarum Berk. in Hooker, The Botany of the Antarctic Voyage. (Flora Antarctica) 1: 447, pl. 162, fig. 3. 1844.

Data on the type see Sydowia 5: 474. 1951.
The exact position of this species in *Galerina* cannot now be ascertained. However, its generic identity is indubitable; its habitat is characteristic; and it has been illustrated by its original author. A topotype specimen from the Malvinas will probably clear up its affinities.

Galerina marthae spec. nov.—Pileo ochraceo-brunneo, glabro, pellucide striato, haud viscido, margine saepe crenulato, convexo, obtuso, 6–12 mm lato.—Lamellis ferruginascente-ochraceo-brunneis, mediocriter latis, subdistantibus, adnexis vel adnatis.—Stipite e basi ad apicem pileo concolori, nudo et glabro apice excepto ubi e dermatocystidiis pruinatus est, aequali 25–33 × 1.5–2 mm; velo in juvenilibus et vetustis nullo obvio, sed in juvenilibus sub lente in stipite margineque pilei fibrillis minutissimis interdum discernibilibus.—Contexto inodoro.—Sporis 8.5–10–(12) × 5–6.5 μ, minute verruculosis vel punctatis, ornamentatione colore suo bene differentiata exosporiali praeditis, punctulis saepe catenulatim dispositis, disco levi suprahilari bene limitato, poro germinativo haud evoluto.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 24–31 × 7.5–8 μ, (2)–4-sporis. Cheilocystidiis 22.5–62.5 × 6–10.5 μ, ventricosis et apicem obtusum versus mediocriter vel longe effilatis, ibi 1.5–4 μ latis, summo apice aequalibus vel multum frequentius subcapitatis vel capitatis, capitulo 4–6 μ diam., hyalinis, tenui-tunicatis, acie lamellarum heteromorpha. Prope marginem pilei ad aciem lamellarum nonnullis cheilocystidiis clavato-vesiculosis e.gr. 17 × 8 μ observatis.—Hyphis ita ut basi basidiorum et cheilocystidiorum fibuligeris.—Epicute pilei angusta haud gelatinosa, ex uno vel duobus stratis hypharum, repentium, 3–4 μ crassarum hyalinarum efformata; hypodermio ex elementis saepe crassioribus, pigmento ochraceo-brunneo fortiter incrustatis efformato.—Ad terram lapidosam inter muscos, praecipue Polytrichaceas, secundum viam in silva. —Typus a Martha Singer lectus, a R. Singer (M 5589) communicatus et in Herbario BAFC conservatus est. CHILE: Valdivia, Cordillera Pelada, 420 m alt., 7–V–1965.—Galerinae perrarae nec non *G. unciali* et *G. dominici* comparanda species.

GALERINA PERRARA Sing., Contrib. Inst. Antártico Argentino, 71: 15. 1963.
Description see there.

Galerina coquimbensis Sing. spec. nov.—Pileo atrobrunneo ("cattail", "Mandalay", M & P), dein dilutius brunneo ("Peruvian br.", "Sudan br." M & P), plerumque magis diluto ("honey middlestone" M & P) inter strias, hygrophano, dehydratatione flavescente ("spruce y" M & P), viscido vel lubrico, margine primum incurvato, glabro, levi, estrio, raro demum breviter sulcato, convexo, papillato vel obtuso vel umbilicato, minoribus plerumque papillatis, majoribus haud papillatis, 9–42 mm lato. —Lamellis brunneis ("chipmunk", "raw sienna", "India buff"), demum obscurioribus (usque ad "cattail" M & P), latis, confertis vel subconfertis, saepe ventricosis, sinuatis. Sporis in cumulo brunneis ("kim kilim" M & P).—Stipite pileo concolori vel subconcolori, annulato, brevi vel elongato, recto vel rarius curvato, interdum obliquo, subaequali, rarius basin versus subventricoso, 12–38 × 2–6.5 mm; velo primum plerumque grisello, dein pallido, annuliformi, apicali, sicco, dense ruditerque cortinoideo, sat crassiusculo, sat persistente, demum appresso, bene evoluto et constante; mycelio basali albido.—Contexto superficiebus pallidiore, in pileo carnoso; sapore miti; odore nullo.—Sporis 6.5–9 × 4.2–5.5 μ, nonnullis vel multis perisporio laxe appresso saccatis et calyptratis, exosporio verruculoso vel subnullo, callo forti subporiformi praeditis sed poro germinativo vero destitutis, disco levi suprahilari bene limitato, brunneis, bene pigmentatis.—Hymenio e cheilocystidiis marginato et ad latera lamellarum basidiis tantum efformato. Basidiis 16–20 × 5.5–7 μ, tetrasporis. Cheilocystidiis omnibus globosis et pedicellatis vel vesiculosis, obtusis, hyalinis, flavidis vel pigmento ochraceo-brunneo tenuiter resinaceo-incrustatis, plerumque hyalinis vel flavidis, tenui-tunicatis, pedicello ubi adest e.gr. 5 × 1.5 μ, numerosissimis.—Hyphis fibulatis, pigmento haud incrustatis, haud gelatinosis epicute excepta.—Epicute pilei pellicula (ixocute) formata, ex hyphis hyalinis distantibus, hyalinis, filamentosis efformata. Hypodermio flavo, haud gelatinoso.—Ad lignum emortuum truncorum (e.gr. Aextoxici punctatae), gregatim.—Typus (M 6532) in Chile a R. Singer lectus et in Herbario SGO conservatus.

Material studied: CHILE: Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6532 (SGO), typus.—10–XI–1967, leg. Franz, comm. Singer M 7828 (SGO).—Colchagua: Pumanque, 25–VII–1967, leg. W. Lazo PU-121 (SGO).

This is the second known species of the subsection *Bulluliferae* Smith & Sing.

The shape of the cheilocystidia is quite constant although in one collection of *G. coquimbensis* (PU-121) a few aberrant cheilocystidia which were very rare and scattered and ventricose, exceptionally clavate (28–42 × 7–12 μ) have been observed among the typical ones. This configuration of the cheilocystidia is considered primitive. It has been found only in

one other species of *Galerina*, viz. *G. bullulifera*, the type species of the subsection which is very closely related. It has slightly different colors, less or not calyptrate spores, strongly incrusted hypodermial hyphae and grows on wood of *Phoebe* in the Argentine subtropics.

GALERINA FUEGIANA Sing., Sydowia 7: 338. 1953.

Description and illustrations see Singer, l.c., and Smith & Singer, Mon. Galerina, p. 338, fig. 233, 234.

GALERINA NANA (Petri) Kühner, Encycl. Myc. 7: 219. 1935.

Description see Smith & Singer, Mon. Galerina, p. 339–342.

Material studied: CHILE: Llanquihue: 2 km west of Puerto Pargua, on woody humus, 9–V–1967, Singer M 6833 (SGO), 2–4-spored.—Valdivia: Cordillera Pelada, Chiverría, 10–V–1965, Singer M 5727 (BAFC), 4-spored.—7–V–1967, Singer M 6779 (SGO), 2-spored.—Hueycolla, 1–V–1967, Singer M 6570 (SGO), 2-spored.—Colchagua: Pumanque, 14–VI–1967, W. Lazo PU-98 (SGO), 4-spored.—Santiago: Quebrada Diego, 6–VII–1967, Singer M 7144 (SGO), 4-spored.—ARGENTINA: Buenos Aires: Rio Paraná, 29–V–1965, Singer S 615 (BAFC), 1–2-spored.— Parque Pereyra, 20–VI–1962, Singer S 207 (BAFC), 2-spored.—For other South American, European and North American material studied by me, see Smith & Singer l.c.

Galerina simocyboides Sing. spec. nov.—Pileo olivaceo-brunneo, sicco brunneo, in vegetis humidis pelludice striato per medium radium, exsiccando levi, glabro, margine primum incurvato, convexo, obtuso, 7–13 mm lato.—Lamellis olivaceis (14–J–6, M & P), sat latis, subconfertis, adnatis, demum sporis subferruginascentibus.—Stipite olivaceo-melleo, sicco brunneo, nudo, subaequali, glabro vel subglabro, 10–20 × 1–1.5 mm; velo nullo viso; mycelio basali pallido.—Contexto subconcolori-pallidiore, carnoso, moderatim tenui in centro pilei, inodoro.—Sporis 6.5–8 × 4.5–5 μ, subamygdaliformibus, applanatione suprahilari praeditis, apicem versus attenuatis, callo subprotracto fortiter evoluto et interdum subporiformi ornatis, disco levi suprahilari bene limitato instructis, verrucosis (verrucis saepe subcristatis), verrucis pro ratione fortibus, 0.3–0.5 μ projicientibus, intense brunneis et contrastatis exosporialibus ornatis.—Hymenio: Basidiis 20–23 × 6.5–7.2 μ, tetrasporis. Cheilocystidiis dimorphis, (a) 11.5–13.5 × 6.5–7.2 μ et vesiculosis, pallide flavidulis, eis Bulluliferarum similibus, (b) 30–46 × 9–12 μ, ventricosis in parte inferiore, collo longiusculo sub apice delatato vel subcapitato (7–8.8 μ diam.) angustato (5.5–6.2 μ diam.). Pleurocystidiis paucis, typo "b" cheilocystidiorum simillimis.—Hyphis haud gelatinisatis, fibuligeris, in tramate

hymenophorali regulari flavis, pigmento haud incrustatis, in pileo radialiter dispositis, in stipite parallelis.—Epicute pilei ex hyphis repentibus angustis, pigmento ochraceo-brunneo-incrustatis efformata, haud gelatinosa; hypodermio minus vel haud incrustato, ex elementis latioribus irregularibus efformato.—Ad lignum emortuum arboris frondosae, gregatim, autumnalis.—Typus (M 6529) a R. Singer in Chile: Coquimbo: Fray Jorge, in silva nebularum 16-IV-1967 lectus et in SGO conservatus est.

Galerina elaeophylla Sing. spec. nov.—Pileo obscure olivaceo-brunneo, in siccis brunneo, hygrophano, dehydratatione leonino, in vegetis humidis per medium radium pellucide striato, glabro, inter strias magis ochraceo, campanulato vel conico, dein convexo, manifeste papillato, 17–21 mm lato.—Lamellis olivaceis, (15-L-9/10, M & P), in siccis plerumque brunneis, 3–4 mm latis, subconfertis vel subdistantibus, arcuato-decurrentibus vel adnatis et dente decurrente praeditis.—Stipite aeneo ("bronze" M & P), in parte inferiore fibrillis pallidis appressis supra trama aeneum ornato, annulato, aequali vel in parte inferiore leniter ventricoso, 25–45 × 2–3 mm; velo apicali annuliformi, annulo tenuiter membranaceo, pallido, moderatim fugaci.—Contexto inodoro.—Sporis 8–9 × 5–5.8 μ, plerumque 8.5 × 5 μ, ellipsoideo-amygdaloideis vel ovoideis, ad apicem distalem attenuatis, interdum mucronatis, plerumque callo forti instructis, ex ornamentatione exosporiali verrucosis, verrucis contrastantibus obscurioribus episporio, disco levi suprahilari bene limitato praesente.—Hymenio: Basidiis 18–24.5 × 6.5–7.5 μ, tetrasporis. Cheilocystidiis et pleurocystidiis (his sparsis) characteristice ventricosis et sub apice capitato constrictis, 40–65 × 12–17 μ, constrictione 7–9 μ diam., capitulo 12–13 μ diam., hyalinis, tenui-tunicatis.—Hyphis fibuliferis, in tramate hymenophorali brunneolo regulari haud gelatinosis, nonnihil sed haud fortiter pigmento incrustatis, partim flavidis, partim hyalinis, nonnullis admodum voluminosis (e.gr. 46 × 31 μ).—Epicute pilei paullum differentiata, ex hyphis repentibus filamentosis sat latis efformata, haud gelatinosa; his ita ut eis hypodermii pigmento ochraceo-brunneo incrustatis.—Ad truncos interdum subustos, putrescentes e.gr. *Quillajae saponariae*, gregatim, autumnalis et hiemalis.—Typus (M 7115) in Chile lectus et in SGO conservatus est.

The margin of the type specimens is often denticulate and fibrous-projecting. This species is related to the preceding one, but even macroscopically different because of the papillate pileus and larger size. The spores are somewhat less heavily verrucose. It is perhaps a species of Central Chile rather than of the southern regions.

Material studied: CHILE: Santiago: Quebrada Diego, near Carmen,

6–VII–1967, Singer M 7115 (SGO), typus.—Colchagua: Pumanque, 14–VI–1967, W. Lazo PU-95 (SGO).

GALERINA VITTAEFORMIS (Fr.) Sing., Trudy Bot. Inst. Acad. Nauk SSSR. 6: 472. 1950.

Var. *PACHYSPORA* Smith & Sing., Mycologia 50: 488. 1958.
Description see Smith & Singer, Mon. Galerina p. 332.

GALERINA ATKINSONIANA A. H. Smith, Mycologia 45: 894. 1953.
Description see Smith & Singer, Mon. Galerina, p. 323.
Material studied: ARGENTINA: Rio Negro: Laguna Frías, 21–III–1963, Singer M 3131 (BAFC).—For other collections see Singer & Smith, l.c. p. 325.

GALERINA SUBANNULATA (Sing.) Smith & Sing., Mon. Galerina p. 293. 1963.
Description see there.

Galerina phlegmacioides Sing. spec. nov.—Pileo fulvo, centro ferrugineo, margine sulcato, viscido, convexo vel convexo-semiglobato, vel convexo campanulato, dein convexo, dein convexo et frequenter applanato circum discum subumbonatum, rarius depresso circum discum, usque ad 70 mm lato.—Lamellis flavobrunneis, dein ferrugineis, in juvenilibus pallidis, mediocriter latis, confertis, adnatis, frequenter dente decurrentibus.—Stipite pallide brunneolo, basi albo, sicco vel lenissime lubrico, glabro, aequali, 25–70 × 5–10 mm; velo non annuliformi, cortina primum manifesta, stramineo-hyalina, vix persistente.—Contexto albo, inodoro.—Sporis 7–8–(9) × 4–5–(5.5) μ, plerumque 7.5 × 4.5 μ, ellipsoideis, haud mucronatis, plus minusve manifeste depressis vel applanatis in zona suprahilari, endosporio pallido, extreme brunneolo tunicatis, levibus vel leniter marmorato-punctulatis (in KOH, immersione), disco suprahilari vix vel bene delimitato, perpaucis sporis visis quae ornamentationem exosporialem manifeste punctatam et discum suprahilarem bene limitatam habent.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis 28–32 × 5–7.5 μ, tetrasporis, raro nonnullis 1–2–3-sporis immixtis. Cystidiis ad aciem (cheilocystidiis) et latera lamellarum aequalibus, numerosis vel persparsis, subulatis vel ampullaceis, apice generatim sat brevi, immo mucroniformi, 3 μ cc. lato, subtus ventricosis sed interdum constrictis, hyalinis vel ochraceis, acutis vel plerumque obtusis, sat variabilibus, 22–47 × 4–9.2 μ.—Hyphis fibuli-

geris, in tramate hymenophorali regulari citrino-pallidis, sed in adultis vel vetustis subhymenium versus subbrunneolis, in subhymenio brunneolis vel ochraceis, elementis parvulis.—Epicute pilei alternante ex hyphis gelatinosis hyalinis vel subhyalinis et subgelatinosis, pigmento tenuiter ochraceo- vel brunneo-incrustatis efformata.—Ad humum prope vel ad basin *Nothofagi alpinae* et *N. dombeyi* et *Drymis*, caespitose, autumnalis. —Typus a R. Singer (M 5711) in Chile lectus, 10–V–1965, prov. Valdivia, Cordillera Pelada, Chivería, in BAFC conservatus.

G. autumnali var. robustae affinis; habitu omnino Cortinarii (Phlegmacii).

GALERINA VICTORIAE Sing., Sydowia 8: 140. 1954.

Description l.c., and Smith & Singer, Mon. Galerina p. 234, 1963.

Material studied: CHILE: Colchagua: Pumanque, 25–VII–1967, W. Lazo PU-105 (SGO).—ARGENTINA: Neuquén: Isla Victoria, 17–V–1952, Singer M 710 (LIL), typus.—M 699 (LIL), paratypus.

GALERINA MACQUARIENSIS Smith & Sing., Mycologia 50: 478. 1958.

This was also found on the South American Continent, with quite the same characters as the type, only the spores reaching 10.2 × 6 μ, and perisporium not loosened in all cases, in some spores distinctly applicate. Pileus up to 31 mm broad; stipe up to 70 mm long. Epicutis distinctly gelatinized.

Material studied: CHILE: Llanquihue: Volcán Osorno, at ± 1000 m alt., on volcanic sand among mosses, outside the woods, 12–V–1967, Singer M 6853 (SGO).—MACQUARIE ISLD.: Langdon Point, West Point, and Half Moon Bay, March and April 1950, 1951 (LIL), (MICH), the latter typus.

Galerina peladae Sing. spec. nov.—Pileo brunneo ("raw sienna" M & P), haud viscido, glabro, levi, convexo, umbonato (ut in *G. unicolore*), 12–14 mm lato.—Lamellis ochraceo-flavis vel brunneis ("spruce y" vel "hazel" M & P), latis, subconfertis vel subdistantibus, adnatis.—Stipite sordide melleo-brunneo, interdum magis brunneo basin versus sed ibi numquam biso nec fusco, annulato, ceterum nudo, subaequali, 18–22 × 1–2 mm; velo annuliformi, annulo bene evoluto et sat persistente quamquam saepe collabente, pendulo, membranaceo, apicali.—Contexto inodoro.—Sporis 7.5–9 × 4.5–5.5 μ, ellipsoideis, bene pigmentatis, verruculis manifestis parvis exosporialibus obsitis, perisporio plerumque stricte applicato, in sporis perpaucis sublaxo praeditis, poro germinativo destitutis, disco

suprahilari levi bene delimitato.—Hymenio e cystidiis et basidiis efformato, his 20 × 7μ cc., tetrasporis. Cystidiis ad aciem et latera lamellarum, 38–56 × 14–17 μ, ampullaceis, sed ad apicem extremum frequentius dilatatis (6–13 μ), in apicibus haud dilatatorum 6–11 μ latis, ochraceo-brunneolis, tenui-tunicatis. Cheilocystidiis ad aciem tantum obviis, densis, 12–35 × 7–11 μ, late cylindraceis vel vesiculosis, brunneolis.—Hyphis fibuligeris.—Epicute pilei haud vel vix gelatinisata, vix 10 μ lata, plerumque ex hyphis repentibus hyalinis efformata.—Ad terram arenosam inter muscos varios (nec Sphagna), prope nonnullas Fitzroyas et Nothofagos betuloides, gregatim.—Typus (M 6735) ab Martha Singer lectus, a R. Singer communicatus, 6–V–1967, Chile: Valdivia: Cordillera Pelada, 1.5 km S. a Mirador ad marginem uliginis, in SGO conservatus.—*G. asteliae, G. physosporae, G. unicolori* affinis, aut similis.

Galerina asteliae Sing. spec. nov.—Pileo brunneo ("kis kilim" vel "Arab", M & P), lubrico-nitente, haud vel paullulum striatulo, glabro, convexo-subcampanulato vel convexo, frequenter subumbonato, 20–29 mm lato.—Lamellis brunneolis ("chipmunk" vel "Seminole"), ad stipitem latis, ceterum angustis, confertis, adnatis. Sporis in cumulo brunneis ("raw sienna" M & P).—Stipite fusco ("Madrid" M & P)–fibrilloso, fibrillis innatis sed carnem dilutiorem exponentibus, annulato, cavo, apicem versus leniter vel manifeste attenuato, 40–65 × 7 mm; velo tenui-membranaceo, sat persistente, apicali, pendulo.—Sporis 7.5–9 × 4.5–6 μ, plerumque 7.5–8.5 × 4.5–5.5 μ, ellipsoideis vel amygdaliformibus, bene pigmentatis, ornamentatione exosporiali manifeste verrucoso-subruguloso-punctatis vel verrucosis, frequenter leniter asperulis in circumferentia, disco levi suprahilari bene limitato.–Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis 21 × 7–8.5 μ, tetrasporis. Cheilocystidiis 12–27 × 4–9 μ, clavatis, hyalinis vel stramineis. Cystidiis ad latera et acies lamellarum praesentibus, 40–60 × 13–18 μ, ventricosis et sub dilatatione obtusa latiuscula (7–15 μ) constrictis (6–10 μ diam.), rarissime ex toto ampullaceis nec ad apicem dilatatis, interdum apice 2–5 nodis obtusis praedito, membrana hyalina vel dilute ochracea, firma sed haud crassa (usque ad 0.5 μ crassa), pedicello interdum longo.—Hyphis fibulatis.—Epicute pilei haud gelatinisata vel plus minusve gelatinisata in zona superiore tenuissima vel tenui (3–10 μ diam.), ubi omnes hyphae hyalinae, tenuiter filamentosae sunt. Hypodermio cutiformi haud gelatinisato hyphis latioribus pigmento tenuiter incrustatis ferrugineis consistente.—Ad Monocotyledones (Asteliam pumilam et Gramineas) in uligine extra silvam gregatim, autumno.—Typus (M 6557) a R. Singer in Chile, provincia Valdivia, Cordillera Pelada, 900 m altitudinis, 30–IV–1967 lectus et in Herbario SGO conservatus est.

GALERINA PATAGONICA Sing., Sydowia 8: 140. 1954.

Description see Singer l.c., or Smith & Singer, Mon. Galerina, p. 263–264.

Additional material always showed identical or very similar characters. In some collections giant spores are present (up to 13.5 × 6 μ). The epicuticular layer is never a pellicle although the uppermost 1–3 thiers of the epicutis may show intermittently some slight gelatinization in some collections.

Material studied: CHILE: Llanquihue: El Frutillar, on wood of *Aextoxicum punctata,* 16–IX–1967 (spring), Singer M 7556 (SGO.)—Valdivia: Hueycolla, 50 m alt., 500 from ocean, on trunks of *Aextoxicum punctata,* 1–V–1967, Singer M 6569 (SGO).—Valparaiso: Quintero, 27–VI–1967 (winter), Singer M 7012 (SGO).—Valdivia: West slope of Cordillera Pelada at 420 m alt. 7–V–1965, Singer M 5569 (BAFC).—ARGENTINA: Neuquén: Quetrihué, 16–V–1952, Singer M 677 (LIL), typus.—M 679 (LIL).—17–V–1952, Isla Victoria, 880 m alt., on Myrceugenia, Singer M 702 (LIL).—13–V–1952, Quetrihué, Singer M 518 (LIL).—14–V–1952, Quetrihué, M 599 (LIL).

Galerina quinteroensis Sing. spec.—Pileo brunneo, viscido, levi, convexo, typice obtuso, 20 mm cc. lato.—Lamellis brunneis, latis, subdistantibus, adnato-decurrentibus.—Stipite pallide stramineo, glabro, nudo annulo excepto, cavo, magno in typo, 140 × 11 mm; annulo crasse membranaceo, persistente, quamquam demum collabente.—Contexto in pileo et stipite subcrasso, in pileo pallido, odore et sapore manifeste farinaceo.—Sporis 7–9.5 × 4.8–5.2 μ, ellipsoideo-amygdaliniformibus, moderatim fortiter pigmentatis, ornamentatione exosporiali subtiliter verruculoso-punctatis vel manifeste verrucoso-punctatis, leniter asperulatis, callo apicali praeditis, poro germinativo destitutis, disco levi suprahilari manifeste limitato praesente.—Hymenio e basidiis et cystidiis efformato et cheilocystidiis marginato. Basidiis tetrasporis. Pleurocystidiis 45–60 × 14–18.5 μ, ampullaceis (apice moderatim longo vel longiusculo, raro brevi praeditis), semper late rotundatis, ad apicem attenuatis vel frequentius ad apicem aequalibus vel dilatatis, multis appendiculis digitiformibus apicalibus duobus vel quattuor ornatis, ad apicem 8–10 μ latis, hyalinis vel pallide brunneolis tenuiter sed firme tunicatis, numerosis. Cheilocystidiis pleurocystidiis simillibus et (in typo alio) multum tenuioribus: filamentosis vel ventricosis et multis ex eis ad apicem capitatis (5–7.5 μ diam.), elongatis, hyalinis vel pallidissime brunneolis.—Hyphis fibulatis, in tramate hymenophorali regulari brunneolis, neque eis neque his subhymenii vel hymenopodii gelatinosis.—Epicute pilei usque ad 50 μ lata, gelatinosa, ex hyphis ixocutem efformantibus, tenuibus, filamentosis, hyalinis

efformata. Hypodermio ex elementis latioribus haud gelatinosis efformato. —Ad lignum putridum Myrtacearum, solitario.—Typus (M 7004) in Chile a R. Singer, 27–VI–1967 lectus et in SGO conservatus est.

Material studied: CHILE: Valparaiso: Relict forest at Quintero, 27–VI–1967, Singer M 7004 (SGO), typus.—Another collection is most probably identical, but was too young to be identified with certainty (much smaller in size, perhaps a spring form): Llanquihue: Between Ensenada and Ralún, 18–IX–1967, Singer M 7592 (SGO).

GALERINA VISCIDA (Peck) Smith & Sing., Mon. Galerina, p. 244, 1963.

Since our South American material differs slightly in pileus color (ochraceous brown) when fresh and moist, although fading to light ochraceous yellow as the type, we suspect that the type was originally described in faded condition, inasmuch as all the other characters including all the microscopical ones are strictly identical with those given by Smith & Singer, l.c.

Material studied: CHILE: Valdivia: Hueycolla, 4–V–1967, Singer M 6731 (SGO), growing on rotten woody material buried in sandy soil in the shade of tall growth of *Chusquea* sp.

GALERINA RIPARIA Sing., Sydowia 7: 249. 1953.

Description see there, and Smith & Singer, Mon. Galerina p. 267, 1963.

GALERINA MOELLERI Bas, Persoonia 1: 310. 1960.

Description see Singer, Contrib. Inst. Antárt. Argent. 71: 19. 1962 and in Smith & Singer, Mon. Galerina p. 241, 1963.

This species belongs in stirps Marginata of the system of classification adopted in Smith & Singer since the epicutis is normally not a pellicle, only exceptionally the outermost thiers of hyphae of the epicutis are very slightly gelatinized, as is also the case in *G. patagonica*.

Galerina austroandina (Sing. in Smith & Singer) Sing. comb. nov.

Galerina cedretorum var. *austroandina* Sing. in Smith & Sing., Mon. Galerina, p. 281, 1963.

Material studied: ARGENTINA: Rio Negro: Path from Laguna Frías to Paso de las Nubes, along Rio Frías, 16–III–1959, Singer M 1849 (LIL) typus.—Laguna Frías, 21–III–1963, Singer M 3094 (BAFC).—Cerro Catedral, 24–IV–1965, Singer M 5167 (BAFC).—Neuquén: Quetrihué, 21–IV–1965, Singer M 5120 (BAFC).

This species differs from *G. cedretorum* and other extralimital species in the long apex of the cystidia, and is constantly found on rotten wood

and wood debris not only of conifers (*Fitzroya*, *Saxegothaea*) but also on myrtaceous wood and on *Nothofagus*. We consider it autonomous, inasmuch as no other species referable to the *G.-cedretorum*-complex occurs in South America. The differentiation of *G. austroandina* is much more difficult when we take into account other species of the same region which, even though they belong to section *Galerina* in the delimitation of Smith & Singer—having a straight pileus-margin when young—appear to be strictly related to *G. austroandina*, and even somewhat difficult to separate from it in certain cases. These species are *G. gamundiae* and *G. inconspicua*. The practical possibility of separating section *Galerina* from stirps *Cedretorum* becomes therefore somewhat problematic.

Galerina conspicua Sing. spec. nov.—Pileo brunneo ("oak" M & P), ad marginem subflavo, hygrophano, dehydratatione multum pallidiore, margine in juvenilibus incurvato, in maturis breviter striato, convexo, obtuso, 15–20 mm lato.—Lamellis ochraceo-brunneo ("chipmunk" M & P), latis, ventricosis, subdistantibus, adnatis.—Stipite brunneo ("mummy" M & P), ad basin in vetustis atrobrunneo, sed pallide melleo fibrilloso e fibris superficialibus velaribus et ad apicem pallide pruinato ,aequali, 25 × 2 mm cc.; velo in primordio et in juvenilibis cortiniformi, apicem stipitis cum margine pilei connectante, pallido vel pallide melleo, perfugaci, numquam annuliformi, pallido in siccis.—Contexto subconcolori, tenui, inodoro vel odore debili inflorescentiae Maydis gaudente.—Sporis 10–14.5 × 6.3–8.2 μ, ellipsoideis, rarissime elongatis et angustis, sed saepe ovoideo-subfusiformibus, sine mucrone apicali sed callo bene evoluto instructis, poro germinativo destitutis, perisporio bene evoluto sat laxo hyalino, ad apicem sporarum saepe separato et ibi eis ornamentatione abrupte destitutis, aliis aequaliter ornamentatis, ornamentatione exosporiali semper manifesta, subtiliter punctiformi vel subcrasse verruculosa praeditis, subfusco-brunneis (fortiter pigmentatis), disco suprahilari levi bene limitato.—Hymenio e basidiis et cystidiis efformato. Basidiis 28 × 6.3 μ cc., (1)–2–(3)-sporis, hyalinis, raro brunneolis, interdum granulis brunneis intermis ornatis. Cheilocystidiis et pleurocystidiis simillimis, 36–63 × 4.5–9 μ, ampullaceis, apice admodum elongato subcylindraceo subangusto (3–4.3 μ diam.) gaudentibus, hyalinis, tenui-tunicatis, sat numerosis ad latera et densis ad acies lamellarum.—Hyphis fibulatis, in tramate hymenophorali regulari brunneolo-hyalinis, haud incrustatis.—Epicute pilei ex hyphis appressis, cutem formantibus, filamentosis, haud incrustatis, haud gelatinosis, efformata; nonnullis membris terminalibus sparse subascendentibus, sed dermatocystidiis nullis. Hypodermio etiam cutiformi, hymenophoro structura sua simili. Ad apicem stipitis dermatocystidiis numerosis cystidiis hymenialibus similibus praesentibus.—Ad et

inter muscos, ad truncum Nothofagi antarcticae ascendentes, usque ad 1 m supra terram, gregatim, autumnalis.—Typus a R. Singer (M 3186) in Argentina: Rio Negro, inter Laguna Frías et Paso de las Nubes 24–III–1963 lectus et in Herbario BAFC conservatus est.—*G. austroandinae* affinis.

GALERINA GAMUNDIAE Sing. in Smith & Sing., Mon. Galerina, p. 294, 1963.
Description see l.c.

GALERINA INCONSPICUA Smith & Sing., Mycologia 47: 592. 1955.

Var. *INCONSPICUA:* See description l.c. and Smith & Sing., Mon. Galerina p. 309, 1963.

Var. **mixta** Sing. var. nov.—A var. *inconspicua* differt praesentia nonnullorum basidiorum tetraspororum. Typus: M 5064 (BAFC), typus varietatis.

Material studied: ARGENTINA: Rio Negro: Lago Nahuel Huapí, near Santa María, among mosses on sandy soil, 19–IV–1965, Singer M 5064 (BAFC), typus.—M 5058 (BAFC), paratypus varietatis.

Var. **sublevis** Sing. var. nov.—A var. *inconspicua* sporis subtiliter verruculosis nec non margine vix vel paullum pellucide striato differt.—Ad humum et quisquilias exiguas in silva mixta.—Typus (M 3324) a R. Singer in Argentina, Neuquén, Puerto Manzano, 900 m alt., 8–IV–1963 lectus et in BAFC conservatus.

CREPIDOTACEAE

Tubaria

Tubaria strophosa Sing. spec. nov.—Pileo brunneo vel rufescente-brunneo ("kis kilim" vel "cocoa", inter strias frequenter "tawny" M & P), primum levi, dein pullicide striato, in carophoris magnis breviter (2–3 mm) striato, in parvulis vel tenuibus per tres quintas radii usque pellucide striato et interdum etiam sulcato, haud viscido, subglabro vel sub-

tomentoso vel tomentoso, semper manifeste hygrophano, multum pallidiore in dehydratatis, convexo, plerumque neque umbilicato neque umbonato, sed interdum subumbonato, demum saepe applanato vel subconcavo, 6–36 mm lato.—Lamellis ferrugineo-fuscis vel brunneis ("Cochin", "hazel", "cigarette" M & P), latis, praesertim prope stipitem, confertis vel distantibus, adnatis vel adnato-subdecurrentibus, ad aciem sub lente subfimbriatis. Sporis in cumulo brunneolis ("chipmunk" M & P).—Stipite pileo pallidiore, annulato, aequali vel leniter attenuato apicem versus, 16–55 × 0.7–4 mm; velo albo vel alutaceo-pallido, abundante, annulum apicalem in stipite fibrillosum vel armillatum, vix repandum nec pendulum sat persistentem efformante et cingulatim vel irregulariter superficiem stipitis sub annulo fibrillis tegente, annulo membranaceo-fibrilloso, dein lacerato.—Contexto inodoro.—Sporis 7–10 × 5–7 μ, raro usque ad 14 × 7.5 μ, dilute ferrugineo-ochraceis, mediocriter crasse tunicatis et membrana ex episporio bene pigmentato et endosporio hyalino consistente nec facile collabente instructis, ellipsoideis vel ovoideis, lateraliter visis interdum subreniformibus, levibus, ornamentatione exosporiali et poro germinativo destitutis, depressione suprahilari et disco suprahilari destitutis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 19.5–30–(44) × 7–9.5 μ, tetrasporis, raro nonnullis bisporis intermixtis. Cheilocystidiis 26–65 × 4–12 μ, ampullaceis sed nonnullis vel multis apice claviculari subdilatato (ibi 4–6.5 μ diam.) praeditis, apice plerumque (6)–13–30 × 2–4.5 μ (sine dilatatione), hyalinis, interdum ad basin secundario-septatis (sine fibula), numerosissimis, sat versiformibus sed haud capitatis.—Pleurocystidiis nullis, sed perpaucis cheilocystidiis interdum ad latera prope acies ascendentibus. Pseudoparaphysibus raris, hyalinis, vesiculosis, e.gr. 36 × 13 μ, pedicellatis.—Hyphis fibuligeris, haud gelatinosis, in tramate hymenophorali regulari brunneolis vel pallide cinnamomeis, in vetustis pigmento incrustatis, 2.5–8.5 μ latis.—Epicute pilei haud gelatinosa, ex hyphis repentibus, vix pigmento incrustatis, 2,5–4 μ latis efformata, tenuiuscula. Hypodermio ex elementis latioribus (6–11 μ latis), pigmento ferrugineo-ochraceo-brunneo incrustatis efformato.—Ad terram et humum in silvis nothofagineis, autumnalis.—Typus (M 3630) a R. Singer in Argentina lectus et in BAFC conservatus est.

Material studied: ARGENTINA: Neuquén: Arroyo Frutillas, 28–IV–1964, Singer M 3639 (BAFC), typus.—M 3627 (BAFC).—M 3610 A (BAFC).—M 3622 (BAFC).—M 3617, 3628 (BAFC).—Cerro Cortinario above Puerto Manzano, 1100 m alt., 11–IV–1963, Singer M 3366 (BAFC).

This species is very close to *T. furfuracea* and *T. praestans*, but seems to differ constantly in our region by a combination of characters all its own.

TUBARIA FURFURACEA (Pers. ex Fr.) Gillet, Hymenomycetes p. 538, 1874.

For a description of our autochthonous South American specimens of the *Nothofagus* area see Singer, Sydowia 8: 142–145, 1954, under the name *Tubaria gregoriana*, a species undoubtedly identical with *T. furfuracea* sensu lato.

It would certainly be possible to distinguish forms or varieties on the basis of character combinations such as result from a comparative study of the shape of the pileus, the cheilocystidia, the spore size, and the colors, perhaps also the fruiting periods and the habitat. However, at the present moment we do not feel competent for doing so. The only varieties we feel we should separate at present are the following:

Var. **anthracophila** (Karst.) Sing. comb. nov. (= *Tubaria anthracophila* Karst., Symb. Mycol. F. 7, Medd. Soc. Fauna Fl. Fenn. 6: 4. 1881).

Pileus rusty cinnamon or rusty-ochraceous brown, hygrophanous, dry and dried much paler ("paler" than "sweatmeat" and "dorado" M & P), wet with short to long (up to three quarters of radius) transparent striation, smooth, not wrinkled, young always beset with white floccons of the veil in the marginal zone, but these soon diseappearing, glabrous otherwise, campanulate or convex, then convex and obtuse, with applanate to slightly umbilicate center, more rarely neither applanate nor umbilicate, eventually often irregular, 18–40 mm broad.—Lamellae ochraceous pallid, then pallid ochraceous to brownish ("toast" M & P), moderately broad to broad, broadest near stipe, more rarely near margin, subascendant at first but soon becoming horizontal, subclose to subdistant, with denticulate or pallid fringed edges, adnate to adnate-subdecurrent.—Stipe brownish pallid to pale ocher brownish, eventually in dried condition becoming concolorous with the pileus, with velar floccons which are early washed off or disappearing, otherwise glabrous, hollow, 22–45 × 2.5–4 mm; veil not forming an annulus, only covering the stipe, especially the upper third of young specimens, with pallid flocculi, later leaving the stipe naked; basal mycelium scanty, pallid.—Context concolorous, hygrophanous, fleshy in pileus; odor none, or slightly raphanaceous.

Spores 7.3–8.3 × 5–5.3 μ, ellipsoid, more rarely ovoid, with broadly rounded ends, not amygdaliform or reniform, without germ pore or callus, light ochraceous, not easily collapsing, but wall rather thin.—Basidia 4-spored. Cheilocystidia 39–49 × 5.7–9 μ, slightly to distinctly ventricose below and at apex, with a constriction between the two swollen areas, but not capitate or subcapitate, sometimes basal thickening, sometimes apical thickening broader, always broadly rounded, hyaline.—Hyphae with clamp connections, but these may be scattered, with many

clamp-less septa in some sections, in the regular hymenophoral trama hyaline.—Epicutis of pileus not strongly differentiated, of elongated repent elements, not gelatinized.

On old fire places, in burned areas of the woods, often directly on charcoal, usually gregarious, fruiting in fall.

Material studied: ARGENTINA: Rio Negro: Lago Nahuel Huapí, Brazo Tristeza, 7–V–1964, Singer M 3981 (BAFC).—M 4000 (BAFC).—Neuquén: Angostura, Selva Triste, 18–IV–1965, Singer M 5027 (BAFC).

This differs from our var. *furfuracea* in hyaline hymenophoral trama, the correlation of ventricose and constricted cheilocystidia wit pileus characters and veil characters, and the habitat. It is perhaps nothing but an ecotype, certainly not an autonomous species.

Var. *FURFURACEA* is here used as the name for all the forms not having the characters of the varieties now defined and conspecific yet constant, in the present treatment of all those forms that were identified by us with *T. gregoriana* (Speg.) Sacc., cf. Sydowia 8: 142. 1954.

Var. **novembris** Sing. var. nov.—Pileo ochraceo-brunneo, dehydratato gilvo, in maturis omnino evelato, per medium radium pellucide striato, ceterum glabro, convexo, demum margine recurvato, 13–15 mm lato, neque umbonato neque umbilicato.—Lamellis cinnamomeo-brunneis, latis, ventricosis, adnexis vel adnatis, subdistantibus.—Stipite cinnamomeo-ochraceo-brunneo, macroscopice glabro in vegetis, in siccis sub lente ad apicem pruinoso et subtus pallide sericeo, saepe curvato, cc. 20 × 2 mm, apice interdum incrassato et basi subbulbuloso; velo sericeo, appresso, haud manifesto; mycelio basali albo.—Contexto subinodoro.—Sporis minutis: 5.5–7 × 3.5–4.5–(5) μ, ellipsoideis, haud amygdaliformibus, raro paucis ad latus interius leniter concavis, levibus, dilute brunneolo-ochraceis, obscurius ochraceo-brunneolis in cumulo, haud admodum pallidis, nonnullis collabentibus in medio alkalino.—Basidiis tetrasporis. Cheilocystidiis 28–35 × 7–9 μ, basi ventricosis et sub apice incrassato semel vel bis constrictis, rarius clavatis et basi ventricosa destitutis, semper obtusis, hyalinis.—Hyphis tramatis hymenophoralis ochraceis, pigmento subtiliter ochraceo-incrustatis, 8–15 μ latis, fibulatis.—Epicute cutiformi, ex hyphis angustis et sublatiusculis hyalinis vel subhyalinis haud gelatinosis repentibus efformata.—Ad corticem ramorum delapsorum in silva nothofaginea (*Nothofagus obliqua* et *N. alpina* et *N. dombeyi*), vernalis.—Typus (M 6009) in Argentina, Neuquén, Lago Lácar, loc. Hua hum, 5–XI–1966 a R. Singer lectus et in BAFC conservatus.

This is sufficiently different from any of the various forms or species distinguished by Romagnesi in Europe.

Tubaria jaffuelii (Speg.) Sing. comb. nov.

Naucoria jaffuelii Speg., Bol. Acad. Nac. Cienc. Córdoba 25: 16. 1921.

For the macroscopical description see Spegazzini l.c.

Microscopical data taken from the type:

Spores 7–10.3 × 4.5–5.5–(6.2) μ, amygdaliform or ovoid-fusoid, strictly attenuate towards the apex, hyaline or slightly stramineous (much like *Rhodophyllus-spores*) when seen in KOH, with rather thin and nearly homogenous, with a stramineous episporium and a hyaline endosporium, smooth, often collapsing, without germ pore or callus, inamyloid.—Basidia 16–26 × 5–7 μ, more often near 26 × 7 μ than smaller clavate, 2–4-spored. Ceilocystidia clavate, usually more voluminous than the basidia but in part replaced by terminal members of hyphae which are little differentiated, filamentous with often broadened apex 2–2.5 μ broad. —Hyphae of hymenophoral trama ireegularly arranged, filamentous, hyaline, inamyloid, with clamp connections.—Epicutis of pileus a rather thin layer of interwoven filamentous hyphae which are hyaline to stramineous, smooth or slightly nodulose, sometimes ramified.

Material studied: CHILE: "Los Perales", "Marga-marga", May 1918, Porter, det. Spegazzini, (LPS), typus.--ARGENTINA: Remedios de Escalada, 31–III–1952, Emilio de Busto, pure culture Wright B 644, (Min. Agric. Buenos Aires).

This species is very similar to *T. pallidospora* Lange and *T. conspersa* (Pers. ex Fr.) Fayod sensu Romagnesi among the European, and *T. fusci-folia* Murr. among the North American Tubarias. It differs from the latter in absence of a conspicuous ring of velar floccons on the pileus and smaller cheilocystidia, from the first two in the colors, from *T. pallidospora* also in the shape of the cheilocystidia. It is perhaps closest to *T. conspersa*, and *T. pseudoconspersa* Romagnesi, but has hyaline (dried white or whitish) trama and simply adnate lamellae, and is not obtuse at the margin, according to Spegazzini's description. It is very doubtful that *A. conspersus* Pers. ex Fr. is really this fungus as described by Kühner & Romagnesi, which would have to be renamed, so that *T. jaffuelii* would appear to be a correct name for the European fungus if *T. conspersa* sensu Romagnesi or *T. pseudoconspersa* were conspecific with the Chilean fungus.

A very similar species has been collected by me in Bolivia, Coroico, 27–I–1956, Singer B 586. Here the pileus is slightly silky-subtomentose as in the Chilean species, but the lamellae are decurrent with a tooth; the stipe is covered by the veil as is the pileus. The hymenophoral trama is also hyaline. The spores are equally subhyaline, but the cheilocystidia still more variable.

T. jaffuelii has not been observed in Southern Chile or Southern Argentina; it is marginal as far as the Southern flora is concerned.

Melanomphalia

MELANOMPHALIA VISCOSA Sing., Symposium Hesler 1969 (in print).

MELANOMPHALIA VERNIFERA Sing., l.c.

MELANOMPHALIA CORTINARIOIDES Sing., l.c.

MELANOMPHALIA PLATYPHYLLA Sing., l.c.

MELANOPHALIA OMPHALIOPSIS (Sing.) Sing. l.c.

MELANOMPHALIA INOCYBOIDES Sing., l.c.

MELANOMPHALIA PACIFICA Sing., l.c.

Crepidotus

CREPIDOTUS CROCOPHYLLUS (Berk.) Sacc., Syll. Fung. 5: 886. 1887.

Description see Lilloa 25: 401. 1952.

CREPIDOTUS APPLANATUS (Pers. ex Fr.) Kummer, Führer Pilzk. p. 74, 1871.

Description see Sydowia 8: 147. 1954; this agrees well with Josserand's description and figures Bull. Soc. Mycol. Fr. 53: 221. 1937. In view of the larger spores of our specimens from the South of South America, this would be the same as var. *globiger* (Berk.) Sacc. Syll. 5: 879. 1887 in the interpretation of Pilát and Hesler & Smith. We find the lamellae narrow to sometimes medium broad, the young pileus with a pubescence due to dermatocystidia, and the cheilocystidia as described by Hesler & Smith. The pileus is definitely hygrophanous. Some of our material darkened on drying, some remained white. I am therefore at a loss when trying to decide on the position of *C. hygrophanus* as described by Hesler & Smith. I found the type extremely similar to *C. nephrodes* (*C. malachius* in Hesler & Smith's taxonomy). The darkening specimens had spores 5.3–6.7 × 5.3–6.7 μ; others 6.5–7.2 μ diam. or 5.8–6.3 μ diam. These were described separately in Arkiv f. Botanik 4: 397. 1959.

However, there exist also specimens with smaller spores (M 5348 b), identical in other regards, but spores about 5 μ in diam.

Material studied: CHILE: Juan Fernandez, Masatierra, Quebrada Agujereada, 600 m alt., 12–III–1955, B. Sparre F 43 (S, LIL).—this being a darkening from with relatively large spores and relatively broad lamellae; it may be the *C. hygrophanus* Murr. sensu Hesler & Smith.—Colchagua: Pumanque: 29–V–1967, W. Lazo PU-49.—ARGENTINA: Rio Negro: Cerro Catedral, 29–IV–1965, Singer M 3548 b (BAFC).—this is the smaller-spored form.—Isla Victoria: May 1952, Singer M 701 (LIL).—large-spored.—Neuquén: Puerto Manzano, 900 m alt., 8–IV–1963, Singer M 3334 (BAFC).—large-spored, little darkening.—Numerous specimens from other parts of South America as well as North America and Europe.

CREPIDOTUS NEPHRODES (Berk. & Curt.) Sacc., Syll. F. 5: 882. 1887.

We understand this species in the sense of Singer, Sydowia 7: 257. 1953, which is identical with what Hesler & Smith call *C. malachius*.

Our material has scattered to numerous dermatocystidia, and thus corresponds to what Hesler &Smith describe as var. *trichiferus* Hesl. & Sm., Crep., p. 58. 1965.

Var. *MERISTOCYSTIS* Sing., Sydowia 8: 146. 1954.

Description see Singer, l.c., and Nov. Hedwigia 8: 337. 1964.

Var. *MINIMUS* Sing, l.c.

Description see there.

CREPIDOTUS BULLULIFER Sing., Sing. in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 182. 1965.

Description see there.

CREPIDOTUS SPHAEROSPORUS (Pat.) Lange, Dansk Bot. Ark. 9: 52. 1938.

Var. **austrocedri** Sing. var nov.—Pileo sordide albo vel albo, interdum breviter sulcato, sericeo, haud viscido, dimidiato vel resupinato-reflexo, ad latus posterius late adnato vel libero et inciso, convexo, dein irregulariter applanato, 6–10 mm lato.—Lamellis albis, dein avellaneis vel argillaceo-brunneolis ("Pablo" M & P) sat latis (usque ad 2 mm), moderatim confertis vel subdistantibus, rotundato-concurrentibus.—Stipite rudimentario vel minutissimo in juvenilibus, demum saepe invisibili, albo.—Contexto albo, exiguo, inodoro.—Sporis 6.8–9.7 × 4.8–7 μ, ellipsoideo-subamygdaliformibus vel breviter ellipsoideis vel ellipsoideis (e.gr. 7.5 ×

6.2 μ et 9.6 × 5.1 μ), manifeste punctulatis ex ornamentatione typi XI sed spinulis brevissimis et tenuibus et vix vel haud obscurius pigmentatis quam episporium.—Basidiis 20–30 × 7.5–9 μ, tetrasporis, perpaucis interdum trisporis. Cheilocystidiis inter basidia et basidiola intercalatis sed numerosis, 22–39 × (6.2)–7.5–13.8 μ, sat versiformibus, saepius vesiculoso-clavatis vel clavatis, rarius cylindraceo-subcapitalis vel ventricoso-mucronatis, raro ampullaceis, rarissime filamentotis et apice dilatatis vel bifurcatis, hyalinis, tenui-tunicatis, plerumque latis et semper ad apicem late rotundatis. Pleurocystidiis nullis.—Hyphis fibuligeris, haud gelatinosis.—Epicute paullum differentiata, ex hyphis hyalinis, filamentosis efformata, nonnullis ascendentibus.—Ad corticem ramulosque Austrocedri chilensis, gregatim.—Typus varietatis (Singer M 672) in Argentina: Neuquén, Quetrihué 16–V–1952 lectus et in herbario LIL depositus. Etiam: M 672 a (LIL), paratypus.

Var. **sphaerosporus.**—Pileus white, dried whitish or sordid white, slightly transparently striate only in a hyaline narrow marginal zone which is subhygrophanous, or not striate at all, rarely shortly and slightly sulculate when drying, generally smooth, often sinuate or narrowly bilobed behind and lobate when old in frontal portion, silky, often attached to or touching the substratum in the rear portion, convex, then irregularly applanate broader than long, 9–24 mm broad.—Lamellae at first white or whitish, then mostly assuming a pinkish cinnamon or pinkish tawny to tawny tone ("sayal br." to 11–D–8 of M & P) and eventually color of the spore print, rather broad to broad, more rarely moderately broad, often ventricose, subclose to subdistant, rounded-concurrent to a lateral knob (stipe-rudiment). Spore print brown "English oak" M & P).—Stipe very small and soon disappearing, or none, white.—Context white, very thin, inodorous.

Spores 6.8–9.8 × 4.8–7.2 μ, mostly 7.5–8.3 × 5–5.8 μ, short ellipsoid to ellipsoid to slightly pip shaped, ornamented with inserted very fine and thin spinules (type XI) which are not or scarcely contrasting in color with the episporium of the spores, but rather well pigmented brownish melleous, with subsmooth or smooth circumference. Basidia 20–30 × (7)–7.5–9 μ, 4-spored, rarely some 3-spored one intermixed. Cheilocystidia (21)–31–49 × (4)–5–10.3 μ, versiform, but mostly elongated, cylindric to ventricose, some with ampullaceous-narrowed apex, broadly rounded to narrowed-obtuse, sometimes subcapitate because of a subapical constriction, sometimes clavate, hyaline, thin-walled, numerous but intermixed with a few basidia and basidioles. Pleurocystidia none.—Hyphae with clamp connections.—Epicutis hyaline, non-gelatinized, of filamentous, often ascending hyphae.

On sticks of various trees and shrubs, particularly on *Aristotelia, Nothofagus,* late summer until late fall, mostly gregarious.

Material studied: ARGENTINA: Quetrihué, 16–V–1952, Singer M 656 (LIL).—Rio Negro: Cerro Otto, 12–V–1952, Singer M 494 (LIL). —Laguna Frías, 21–III–1963, Singer M 3128 (BAFC).—Also numerous other collections from South and North America.—FRANCE: Paris: Bois de Vincennes, November 1886, A. Gaillard, Roumeguère, Fungi gallici exsiccati no. 4007 (FH), syntypus.—Also numerous other European collections.—Analysis of type was published in Rev. Mycol. 18: 23. 1953.

The above description is strictly based on Southern Argentine material and this has been compared with the type of the variety. Hesler & Smith have not studied the type of this nor of *C. cesatii,* so I am not absolutely sure whether their material was identical with ours, nevertheless they come to the same conclusions as we (Lilloa 13: 67. 1947) that both species are specifically different. We do not think, however, based on our own experience, that the crooked, bent, or forked cheilocystidia and epicuticular hyphal ends have major taxonomic significance. Therefore, it may well be that their material collected by Josserand (MICH 66267) is conspecific with ours. We wonder, however, whether their material of C. cesatii is really conspecific with the type of that species.

Crepidotus austroandinus Sing. spec. nov.—Pileo dilute brunneolo sed tegumento arachnoideo albo obtecto, et ex ea re albido, exsiccato pallide arachnoieo supra superficiem brunneolam, conchato vel suborbiculari, convexo, dein interdum irregulariter applanato, posterius sinuato, per tertiam radii sulculato, 11–18 mm lato.—Mycelio basali tomentoso ad partem posteriorem pilei fortiter evoluto, albo.—Lamellis albis dein argillaceo-brunneolis, neque carneo- neque flavo-tinctis, mediocriter latis vel sat latis, 2–3 mm latis in majoribus, subdistantibus, rarius mediocriter distantibus, postice concurrentibus in maturis, subrotundatis.—Stipite in primordii centrali dein excentrico et rudimentario vel laterali, usque ad 1–2 × 0.2–1 mm (vel minore).—Contexto albo, inodoro.—Sporis 7.5–9 × 4–5 μ, subamygdaliformibus sed ad apicem obtusis, lateraliter visis depressionem lenem suprahilarem monstrantibus, pallide melleis, ornamentatione typi XI spinulis exiguis brevissimis immersis episporio haud obscurioribus, minutissime subasperulis vel levibus.enHymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 15–22.5 × 6–7 μ, tetrasporis. Cheilocystidiis 17–24 × 4.5–8 μ, versiformibus, forma sua basidiola in mentem revocantibus vel cylindraceis vel late clavatis, rarius subcapitatis, frequenter irregularibus ad apicem, curvatis, facile collapsu. —Hyphis fibuligeris, haud gelatinosis, in tramate hymenophorali hyalinis, in parte superiore tramatis pilei brunneolis.—Tegumento arachnoideo pilei

ex hyphis longe filamentosis hyalinis, haud incrustatis, haud gelatinosis, laxe undatis efformato.—Ad ramos emortuos Raphithamni cyanocarpi nec non ad culmos Chusqueae couleu, gregatim, tarde aestate usque ad autumnum serotinum.—Typus (M 1868) a R. Singer in Chile lectus et in Herbario BAFC conservatus est.

Material studied: CHILE: Llanquihue: Peulla, 20–III–1959, Singer M 1868 (BAFC), typus.—ARGENTINA: Neuquén: Quetrihué, 16–V–1952, Singer M 655 (LIL).

A similar but apparently different fungus, also with relatively narrow and somewhat subamygdaliform spores has been collected in Argentina, Tucumán, Anta Muerta, 2–I–1950, Singer T 807 (LIL), but differs in neither striate nor sulcate pileus and in white color when dried. We suspect that this is the same as *C. eburneus* Hesler & Smith.

We have compared our description with that of *C. fusisporus* var. *anomalus* Hesler & Smith, but habitat, spore shape and cystidial characters are in disagreement. Our species seems to be intermediate between the sections *Fusisporae* and *Crepidotellae* of these authors.

CREPIDOTUS LEPTOMORPHUS (Berk. in Cooke) Sacc., Syll. F. 5: 889. 1887.

Pileus white, whitish, whitish-yellowish, or slightly yellowed near the margin only, dried slightly paler than the lamellae, slightly tomentose at least behind to strongly tomentose, heart or kidney-shaped or subcircular in circumference, often lobed when old, with at first incurved margin, convex, often with umbonate rear portion, 5–18 mm broad.—Lamellae yellow ("malmaison", "primulin y", "Jasmine", later "buff"), eventually brown, narrow to ratherbroad, close to distant, adnexed to subdecurrent on a small function-less stipe which later becomes obsolete, concurrent in the end.—Stipe in primordia functional, even often central, later becoming separated from substratum and rudimentary, lateral, about 0.2 × 0.05 mm, sometimes rudimentary from the beginning, but generally becoming so later, later becoming obsolete and may or may not show as a stipe rudiment.—Context inodorous.—Basal mycelium strigose, stellate-fibrillose, abundant, white.

Spores 7–9.8 × 4–7 μ, mostly 8–8.8 μ long, in some collections predominantly 4–5.2 μ broad, in others, 6.5–7 μ broad, in the type 4.5–6.5 μ broad, varying from ellipsoid to short ellipsoid, almost asperulate, ornamentation consisting of partly or entirely immersed (in the episporium) fine warts or spinules, making the spores appear finely to coarsely punctate, but not contrasting with the (light melleous) color of the episporium, the ornamentation only slightly deeper colored (pale melleous brownish) than the rest of the episporium (melleous-hayline), or con-

colorous with it, the ornamentation hevertheless quite distinct, not faint as in *C. luteolus*.—Basidia 21–30 × 7–10 μ, 4-spored.—Cheilocystidia (17.5)–28–46–(75) × 5.5–11 μ, mostly rather versiform, varying from subampullaceous to ventricose and constricted, or else ventricose without constriction or ventricose-clavate or subvesiculose-clavate, but also often broadly clavate to clavate, mucronate or not, obtuse, thin-walled, the apex generally short (of modified), and sometimes flexuous, rarely cylindric. Pleurocystidia none.—Hyphae with clamp connections, not gelatinized, hyaline, filamentous.—Tomentum of the pileus surface consisting of elongated hyaline hyphae which are smooth, 2.5–10 μ broad, forming a loose trichodermium which may be plastered down in the end.

On fallen branches of various hosts, mostly *Nothofagus*, e.gr. *N. pumilio*, *N. dombeyi*, gregarious, fruiting in spring and fall.

Material studied: ARGENTINA: Neuquén: Lago Correntoso, 25–IV–1964, Singer M 3520 (BAFC).—20–IV–1965, Singer M 5093 A (BAFC).—Cerro Cortinario above Puerto Manzano, 11–IV–1963, Singer M 3374 (BAFC).—Quetrihué, 15–V–1952, Singer M 630 (LIL).—Rio Negro: Path from Laguna Frías to the Paso de las Nubes, 1–2 km from Laguna Frías, 19–XI–1964, Singer M 4049 (BAFC), see note below.—TASMANIA: Archer (K), typus.

The spore size, especially the breadth of the spores is rather variable, but this is partly due to the measurements taken from M 4049 (8.5–9 × 6.5–7 μ) which is above all other measurements. It is also perhaps not a coincidence that this is the only spring collection. We consider it possible that here we are dealing with a spring variety which, however, we hesitate to describe formally at the present moment. The original drawing showing yellowish ochraceous lamellae leaves no doubt regarding our interpretation. Type analysis see Sydowia 9: 415. 1955.

CREPIDOTUS BRUNSWICKIANUS (Speg.) Sacc., Syll. F. 9: 116. 1891.

For a description of this fungus see Singer, Sydowia 8: 145. 1954, and Horak, Nov. Hedwigia 8: 340. 1964.

CREPIDOTUS STERCORARIUS Sing., Sydowia 7: 256. 1953.

Description see there. This is the only coprophilous species known, and was never collected outside the type locality in Tierra del Fuego.

CREPIDOTUS TIGRENSIS (Speg.) Sacc., Syll. 5: 978. 1887.

Var. *VALDIVIENSIS* Sing. in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 183. 1965.

For a description see Singer, Ark. Bot. 4: 398. 1959 (as *C. aristoteliae*

Sing.) and Horak, Nov. Hedwigia 8: 344. 1964 (as *C. valdivianus* Horak). Both *C. aristoteliae* and *C. valdivianus* are synonyms.

CREPIDOTUS CHILENSIS Horak, Nov. Hedwigia 8: 342. 1964.

Description see there.—This species, if correctly described, differs from *C. antillarum* in color. We do not know it, and have never found a species with pinkish reflex on the pileus, or, for that matter, a gelatinous species with clamp connections, in the southern regions.

Pleurotellus

PLEUROTELLUS HYPNOPHILUS (Pers. ex Berk.) Fayod, Ann. Sc. Nat. Bot. VII. 9: 339. 1889.

Pileus white, not viscid but rarely slightly subviscidulous to the touch, mature glabrous or subglabrous, smooth, more rarely very slightly subsulculate, not transparently striate, young more or less downy-villous and cup-shaped-pendulous, attached with the center, later laterally attached and glabrescent, with sinuate rear margin so that it mostly appears reniform in outline, 5–21 mm broad, rarely broader, upper surface convex, later more applanate and margin often flabellate.—Lamellae white, later yellowish buff, ochraceous-cream or ochraceous yellow, even light brownish ("macaroon" M & P), close to subdistant, narrow to medium broad, sometimes ventricose, concurrent to a lateral point when mature. Spore print between "cream buff" and "chamois" (Ridgway).—Stipe none.—Context thin, white, soft, unchanging, without odor and mild, rarely (not in our region) a very slight farinaceous odor and taste has been observed.

Spores 4.5–10 × 1.5–4 μ, in the type of *A. herbarum* 8–9.8 × 2.7–4 μ, in the Berkeley type 4.5–7.8 × 2.3–3.2 μ, but with all intermediate sizes, in Patagonia and South Chile mostly 6.5–10 × 1.5–3.7 μ, smooth even when seen from one pole, with homogenous wall, cylindric to oblong and often more or less fusiform, rarely with concave inner side and then sausage shaped in lateral view, but often with less convex or applanate inner side, subhyaline to melleous ocher or ochraceous-stramineous, pale brownish, rarely, like some hymenial elements and even hyphae, slightly incrusted by a yellowish resinous intercellular material, but not showing a distinct perisporium, without germ pore or callus, often reminding one of bolete spores.—Hymenium: Basidia 11.5–22 × 4.5–7.5 μ, clavate, often relatively short, either all 4-spored or, more rarely, a few 2-spored ones intermixed. Cheilocystidia varying from scattered, inconspicuous and filamentous or subcylindraceous to rather conspicuous, and then ventri-

cose, clavate or fusoid, often with long effilate or short mucronate apex, in this case 10–26 × 4.8–6.8 μ, generally hyaline and thin-walled. Pleurocystidia none.—Hyphae without clamp connections, as are the bases of the basidia, some hyphal elements clavately inflated, but more hyphae filamentous and subequal, more regularly arranged in the middle portion of the hymenophoral trama, more intermixed with inflated ones in the outer (lateral) stratum and there also somewhat interwoven; subhymenium made up of short small elements which are not in their majority isodiametric but densely packed and make the subhymenium appear subcellular.—Epicutis of pileus—a trichodermium of filamentous hyphae, at first rather loosely arranged, little differentiated from the trama of the pileus.

On twigs and chips of wood (Myrtaceae, *Saxegothaea, Nothofagus,* etc., also on *Pinus* and *Quercus),* on dead fallen leaves (e.gr. of *Nothofagus*) and on culms, roots, and especially leaves of living and dead Gramineae, incl. *Chusquea,* more rarely on living and dead mosses; *Hymenophyllum* or various herbaceous stems, generally gregarious, and sometimes congregated, fruiting the year round.

Material studied: CHILE: Llanquihue: Peulla, on *Chusquea,* 20–III–1959, Singer M 1889 (BAFC).—El Frutillar, on dicotyledonous fallen branch, 15–IX–1964 (spring), Singer M 7536 a (SGO).—Valdivia: Hueycolla, 1–V–1967, on stones, covered with mosses and algae, among *Hymenophyllum,* and on herbaceous stems, the same colony passing from one to the other of these substrata, 1–V–1967, Singer M 6571 (SGO).—Maule: El Corte, on *Nothofagus dombeyi* leaves, 3–VIII–1967 (winter), Singer M 7219.—Between Chovellén and Trehualemu, M 7210 (both SGO).—ARGENTINA: Rio Negro: Laguna Frías, on cortex and wood of *Saxegothaea* (conifer), 21–III–1963, Singer M 3131/2 a (BAFC).—Path from Laguna Frías to Paso de las Nubes, on grass in swampy area, 24–III–1963, Singer M 3156 (BAFC).—Neuquén: Isla Victoria, Lago Nahuel Huapí, on *Austrocedrus chilensis* and myrtaceous hosts, chips, 17–V–1952, Singer M 700 (LIL).—Quetrihué: On *Austrocedrus* twigs and bark, 16–V–1952, Singer M 672 (LIL).—ENGLAND: Apton: Captain Carmichael 4 collections in Hooker Herbarium, det. Berkeley as *A. hypnophilus* (K), typus.

Our South Chilean and Patagonian material has inconspicuous cheilocystidia, mild taste, and spore size varying from specimen to specimen. M 1889 had the smallest spores: 6.5–7.5 × 1.5–2.5 μ, M 6571 had them relatively short and relatively broad: 5.5–7.8 × 3–3.8 μ; M 3121/2 a: 5–7 × 2.5–3 μ, M 3156: 7.2–10 × 2.3–3.2 μ. The type is well preserved, and undoubtedly identical with our material. The type of *Crepidotus commixtus* Bres. in litt. ad Krieger, published as *Claudopus commixtus*

Bres., has been collected on *Pinus strobus* and on *Solidago canadensis* in Germany (Krieger 1766, 1767, 1767 a) and agrees also in all characters. Material determined by Cooke as *Pleurotus hypnophilus*, in Hampstead, England, on dead grass, is likewise this species. So is part of the material mentioned as *Crepidotus subversutus* Peck in litt. ad McClatchy, collected by the latter in Pasadena between December and April. The specimen studied (FH) is authentic, February 10, 1894, McClatchy 1764.—We have also seen material from Italy, Canada, Michigan, but French material which Persoon gathered in the Bois de Meudon near Paris in October 1823 and which is apparently the base to his description of *Agaricus *Hypnophilus* Pers. Mycol. Europ. 3: 28. 1828, pl. 24, fig. 5, but not definitely accepted by the author, is apparently a *Rhodophyllus*.

Hesler & Smith call this species *Crepidotus herbarum* (Peck) Sacc. They indicate the type among the specimens studied, yet, they indicate the spores smaller than found by me on the same material. The reason may be that the type contains both types of spores. *C. pubescens* ss. Schröter has, according to Kühner & Romagnesi still larger spores: 7–11–(13) µ.[1]) *Pleurotellus chioneus* (Pers. ex Fr.) Kühner, Le Botaniste 17: 114. 1926 sensu Pilát has not been found in our region. It differs in relatively much broader spores: 6.5–8.8 × 4.3–5.2 µ. It was once found in large quantities on the wooden bords of a mushroom house in Buenos Aires by A. Martinez. The spore print here is "cork" M & P, with a very slight pinkish hue. Hesler & Smith do not indicate it, but it may be assumed that their *Crepidotus coloradensis* is the same species. If this were so, it might be preferable to call this species by the latter name since the interpretation of *Agaricus chioneus* is only traditional, not demonstrable. If it is a species with a spore print such as found in the true *Crepidoti*, it would be the only clear evidence of Hesler & Smith's thesis that *Pleurotellus* should be given up as a genus and considered a synonym of *Crepidotus*.

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[1]) I am at a loss as far as the distinction between *Crepidotus pubescens* Bres. sensu Kühner & Romagnesi (they call it *C. p.* Schröter) and *C. herbarum* is concerned, both as described by Hesler & Smith. The *C. pubescens* as accepted by Kühner & Romagnesi evidently belongs to *Crepidotus pubescens* (Sow. ex Schröter) Kühner & Romagnesi, probably correctly interpreted by Kühner & Romagnesi, and a later synonym of *Pleurotellus hypnophilus* as well as of *C. herbarum*. Kühner & Romagnesi never interpreted Bresadola's species which is a new and independently described species of *Crepidotus* and therefore Kühner & Romagnesi's transfer of Schröter's species to *Crepidotus* creates a later homonym as was correctly stated by both Pilát and Orton. Hesler and Smith's taxonomy is obviously erroneous here aside from the fact that they have no new evidence on Bresadola's type. This, in the interpretation of Orton, has no pinkish tinge, and is described by Bresadola as having cinnamon spores. In our own interpretation, *C. pubescens* Bres. is close to *C. submollis* Murr.

Clitopilus

CLIPTOPILUS HOBSONII (Berk. & Br.) Orton, Trans. Brit. Myc. Soc. 43: 174. 1960.

Var. *HOBSONII.*

Description see Farlowia 2: 558. 1946 as *C. pleurotelloides.*

Material studied: CHILE: Colchagua: Pumanque, W. Lazo, 22–VII–1967 (SGO).—ARGENTINA: Buenos Aires: Castelar, trunk of *Populus alba,* 10–VI–1949, Singer S 147 (LIL).—Neuquén: Puerto Manzano, 18–IV–1965, Singer M 5040, on *Fuchsia magellanica* (BAFC).—Corrientes: Curuzú Cuatiá, on *Salix humboldtiana* wood, 12 km northeast of City, 8–II–1964, Singer S 421 (BAFC).—Misiones: Iguazú, on various débris, on grassy bank, 24–XI–1949, Singer M 51 (LIL).—Jujuy, I–1906. Spegazzini, det. Spegazzini as *Clitopilus pusillus* (LPS).—Tucumán: Anta Muerta, 1100 m alt., 8–XI–1949, Singer T 752, on naked earth in forest (LIL).—Tafí del Valle, Quebradita del Mastil, 24–I–1960, Singer T 3573 (LIL).—BRAZIL: Amazonas: Juruá (FH), typus of *Pleurotus septicoides* Henn.—Rio Grande: Parecí, on bark of *Trichilia elegans, Allophylus edulis,* etc., 2–XI–1951, Singer B 69 (LIL).—São Leopoldo, on living bark of *Guaria lessoniana,* 31–X–1951, Singer B 34 (LIL).—BOLIVIA: La Paz: Nor-Yungas, Capellaria, 22–II–1956, Singer B 1316 (LIL).—VENEZUELA: Miranda: Los Palos Grandes, 29–VI–1958, Dennis 1122 (K).—U.S.A.: California: Part of the "type" of *Crepidotus subversutus* from Pasadena, cf. under *Pleurotellus hypnophilus.*—Michigan: Pellston Hills, 27–VI–1953, Singer N 193 (F).—Florida: Gainesville, on *Viola villosa* leaf, 25–VII–1939, Murrill as *Marasmiellus violae* (FLAS).—AUSTRIA: Niederösterreich, Purkersdorf, 1–VI–1902, Höhnel (FH), as *Pleurotus septicus.*—U.S.S.R.: Karelia: Kellomäki, 29–IX–1940, Singer 5–836 (LE).—FRANCE: "*Agaricus chionellus*", Persoon, on living leaf of *Hedera helix* (L).—Southern France, Dr. Dufour, "*Agaricus chioneus*" (L).—PAKISTAN: Ladhar: On bark of *Zizyphus jujuba,* 6–VIII–1944 (FH).

Var. **chilensis** Sing. var. nov.—A. var. *hobsonii* sporis latioribus: 7.5–10 × 5.5–7.5 μ, plerumque 8–8.5 × 6–6.5 μ, 8–11-costatis manifeste differt.—Typus varietatis (M 6978) a Singer in Chile lectus et in herbario SGO depositus.

In var. *hobsonii,* including the type (cf. Orton, l.c.) the spores are not

broader than 4.5–5.5 μ. In our variety they are short ellipsoid to subglobose, and constantly broader than 5.5 μ. The pileus is white, non-viscid, hygrophanous, conchate, astipitate, the lamellae are pallid to pinkish pallid, rather narrow, distant, with one to two lamellulae. The basidia are 4-spored, 25–26–(28) × 8.5–9.8 μ, without basal clamp, 4-spored. Hyphae without clamp connections, without pigment-incrustations.

Material studied: CHILE: Santiago: Cerro Robles, on bark, 19–VI–1967, Singer M 6978 (SGO) typus.

CLITOPILUS INCRUSTATUS Sing., in Sing. & Digilio, Lilloa 25: 420. 1952.

Var. INCRUSTATUS.

The type variety has not been found in our region. In it the spores are never larger than 7.2 μ. In a Southern form, described below, we find them larger:

Var. **macrosporus** Sing. var. nov.—A var. incustato differt sporis majoribus: 7–9–(10) × 4–7.5 μ, 6–9-costatis.—Typus varietatis (M 6720) a R. Singer in Chile lectus et in SGO depositus.

The pileus is here "caucasia" (M & P), white silky behind, 8 × 6.5 mm. Lamellae pinkish gray, medium distant, broad, ventricose. Stipe none. Basidias 22–27 × 7.5–8.3 μ, 4-spored, without basal clamp. Hyphae without clamp connections, upper layer of trama and epicutis consisting of elongated hyphae which are fuscous to fuliginous from an incrusting and membranal pigment.

On bark, in Chile: Valdivia; Hueycolla, 4–V–1967, Singer M 6720 (SGO), typus.

Rhodocybe

RHODOCYBE CAELATA (Fr.) R. Maire, Bull. Soc. Mycol. Fr. 40: 298. 1925.

Description see there; or, for a similar South American form, Lilloa 25: 426. 1952. As far as South American material is concerned, this species is very variable, the color of the pileus varying from "dogwood" to "negro" M & P, the lamellae from dirty pallid to ochraceous gray, beige, or gray and from close to subdistant. The pileus was finely striatulate over one quarter to one third of the radius in one collection (M 3405).

Material studied: CHILE: Cautín: Paso Tromen, 2–V–1965, under

Araucaria on sandy soil, Singer M 5502 (BAFC).—ARGENTINA: Neuquén: Puerto Manzano, 22–IV–1964, Singer M 3405 (BAFC).—8–IV–1963, Singer M 3332 (BAFC).—Tucumán: Pié de Periquillo, subxerophytic ravine, 30–XII–1951, Singer T 1693 (LIL), a extremely small form (pilus 7 mm diam.).—Tapia, in dry woods of scattered Leguminosae, Anacardiaceae, *Celtis* etc., on dry earth in subxerophytic vegetation, 15–IV–1951, Singer T 1486 (LIL).—U.S.A.: Florida: Alachua Co., Gainesville, under *Pinus taeda*, 10–VII–1943, Singer F 3687 (FH).

Rhodocybe australis Sing. spec. nov.—Pileo fusco ("Cochin", "coffee", Maerz & Paul) vel fuscocastaneo, glabro, levi, sicco, convexo, dein centro depresso, interdum umbilico papillato vel haud papillato praedito, 22–80 mm lato.—Lamellis alutaceo-griseis (12–D–5, M & P) confertis, adnatis vel adnato-decurrentibus, in siccis magis decurrentibus, saepe ab apice stipitis separatis, angustis vel mediocriter latis (usque ad 3 mm latis in exemplaribus 35 mm latis), stipitem versus latioribus.—Stipite umbrino vel pileo concolori, apice frequenter pallidore, ibi lamellis concolori, levi, farcto dein cavo, aequali vel subaequali, glabro, centrali vel subexcentrico, 30–100 × 2–10 mm; mycelio basali albo.—Carne odore stearinico adusto gaudente.—Sporis (6)–6.5–8 × 3.7–5 μ, ellipsoideis sed e polo visis angularibus, circumferentia minutissime undulata vel crenulata, asperulata, inamyloideis, perpaucis lateraliter visis subangularibus, permultis haud angularibus, subhyalinis.—Hymenio e basidiis formato, pseudocystidiis interspersis; basidiis 25–30 × 5–7 μ, tetrasporis; pseudocystidiis ad latera et aciem lamellarum sat numerosis, 25–31–(40) × (4)–5–8.5 μ clavatis vel ventricosis, nonnullis constrictis, rubidofulvis, melleo-ochraceis vel ferrugineo-brunneis incrustatione causa, multis profunde radicantibus, inamyloideis, nonnullis appendiculatis, multis cum vasculis tramatis communicantibus, basidiis minoribus vel eis aequalibus, haud vel paullum projicientibus; cystidiis aliis nullis.—Hyphis (ita ut basi basidiorum) defibulatis, nonnullis ochraeo- vel brunneolo-incrustatis, inamyloideis.—Epicute pilei ex hyphis tenuibus appressis consistente; tramate hymenophorali regulari ex hyphis parallelis efformato.—Ad terram arenosam vel argillaceam in silvis et plantationibus. Typus (BAFC) a R. Singer lectus ad Arroyo Frutillas, provinciae Neuquén, Argentina, no. M 3619, 28–IV–1964.—Paratypus: Vi–8, W. Lazo, Viña del Mar, prov. Palparaíso, Chile, 16–VII–1967.—Species tropicali Rhodocybi caelatoideae Dennis peraffinis et sporis minus angularibus, colore carpophori et pseudocystidiorum differt.

RHODOCYBE HIMANTIIGENA (Speg.) Sing., Lilloa 23: 227. 1951. Description see there.

Material studied: ARGENTINA: Rio Negro: Lago Nahuel Huapí, near Santa María, under *Austrocedrus chilensis* on the ground, 19–IV–1965, Singer M 5063 (BAFC).—Neuquén: Lago Correntoso, 16–IV–1965, Singer M 5012, under *Nothofagus dombeyi* on the ground (BAFC).—Puerto Manzano, 18–III–1963, Singer M 3065, on humus under *Nothofagus dombeyi* and *Austrocedrus chilensis* (BAFC).— Arroyo Frutillas, under *Nothofagus antarctica* on the earth, 9–IV–1963, Singer M 3346 (BAFC).—Cordoba: humiferous soil, shady place near "El Durazno" near Tanti, 5–XII–1958, J. E. Wright, det. Singer (LIL).—Salta: Cafayate, among dry twigs accumulated in hedge, near old Indian village, 4 km northwest of Cafayate where Chuscha emerges from the ravine, 11–III–1955, K. Hayward, comm. Singer T 2746 (LIL).—Tucumán: Capital, on conifer needles, 7–I–1949, Singer T 93 (LIL).—Marcos Paz, on living *Cycas* in a garden, 13–III–1949, Singer T 229 (LIL).—Parque Avellaneda, 28–III–1951, Singer T 1447 (LIL).—San Pedro de Colalao, 23–I–1955, Singer T 2068 (LIL).—San Javier, on ground in subtropical forest, 12–I–1959, Singer T 3233 (LIL).—PARAGUAY: Villa Mora, 1892, J. D. Anisitz 400 (LPS), typus.

It is remarkable that some collections are definitely inodorous (T 93) while one is said to have an odor of rotting wood (T 2746), whereas some of our southern collections (especially M 3346, M 5012, M 5063) have a distinct farinaceous odor.

This species is closely related to *R. parilis*.

R. COLLYBIOIDES Sing., in Sing. & Digilio, Lilloa 25: 425. 1952.

Description see there.

Material studied: CHILE: Valparaiso: Viña del Mar, W. Lazo, 1966 (SGO).—ARGENTINA: Tucumán: Río Lules, 2–IV–1949, Singer T 366 (LIL), typus.—Río Cochuna, 20–II–1951, Singer T 1318 (LIL).—Catamarca: Río Potrero, 1400 m alt., 10–II–1952, Singer T 1851 (LIL).—URUGUAY: Parque Nac. Carrasco, 3–IV–1960, N. García Zorrón 2440, comm. Rosengurtt (BAFC).—BOLIVIA: Beni: Arroyo Florida, 7–IV–1956, Singer B 1552 (LIL).—La Paz, Charobamba, 30–I–1956, Singer B 729 (LIL).—Pando: Conquista, 26–III–1956, Singer B 2262 (LIL).

RHODOCYBE MUNDULA (Lasch) Sing., Lilloa 22: 609. 1951.

Frequently described in the current North American (under *Clitopilus noveboracensis*) and European literature. In Chile only adventicious (e.gr. in Valparaiso, Viña del Mar, leg. W. Lazo, 1966, SGO).

Rhodophyllus austroanatinus Sing. spec. nov.

Var. **austroanatinus.**—Pileo nigro vel subnigro (e.gr. inter "Admiral" et "egg plant" M & P), fibrilloso, saepe subsquamuloso per totam superficiem, haud viscoso, estriato vel ad marginem haud manifeste striatulo, interdum leniter sulcatulo, convexo vel interdum conico-convexo, umbilicato, 19–30 mm lato.—Lamellis violaceis (44–C–5 vel 45–E–6) vel caeruleo-grisellis ("Hathi gr." M & P), ad aciem haud discoloribus, demum roseolo-carneis, arcuatis sed in parte marginali subventricosis, latis, interdum leviter crispulis, confertis vel subconfertis, adnatis vel adnexis, interdum sinuato-subdecurrentibus.—Stipite pileo subconcolori (e.gr. 39–E–5), vel magis atro, glabro, sed sub lente interdum leniter atro-fibrilloso apicem versus quando siccus, nudo, aequali vel ad basin attenuato vel incrassato, 36–52 × 2–5 mm; mycelio basali albo.—Contexto inodoro.—Sporis 8–10 × 5–8.3 μ, raro usque ad 10–12 × 8–8.6 μ, plerumque 9 × 5.8 μ, protuberantiis paucis vel numerosis gibbosis, rarius (5)–6-angulatis, pallide stramineo-carneis, axialiter asymmetricis.—Hymenio e basidiis efformato; cheilocystidiis et pleurocystidiis nullis. Basidiis 25–43 × 8.5–12.5 μ, tetrasporis, ad basin fibulatis.—Hyphis defibulatis, in tramate hymenophorali hyalinis, voluminosis.—Epicute pilei paullum differentiata, ex hyphis repentibus intracellulariter pigmentatis levibus, 4.5–25 μ latis, parallelis efformata; hyphis oleiferis 4–7 μ latis.—Ad terram et humum in silvis.—Typus (M 3093) a Singer in Argentina lectus in herbario BAFC depositus est.

Material studied: CHILE: Valdivia: Hueycolla, in anectotrophic woods, 4–V–1967, Singer M 6721 (SGO).—ARGENTINA: Rio Negro: Laguna Frías, 21–III–1963, Singer M 3093 (BAFC), typus.

Var. **defibulatus** Sing. var. nov.—A var. *austroanatino* differt basidiis ad basin haud fibulatis, dimorphis (a) 24–30 × 8–10 μ, (b) 24–32 × 11–13.5 μ, sporas majusculas (10–11.2 × 8–8.6 μ) producentibus, saepe cystidioliformiter sterilibus si materia resinacea subhyalina incrustata sunt, et tunc interdum subampullaceis et minoribus (e.gr. 20 × 6 μ); sporis interdum axialiter symmetricis, latioribus, 7.5–8.3 μ plerumque latis, magis angulosis (5–6-angulis).—Ad terram in silva nubigena, sub Aextoxicis et Myrtaceis, Aprili.—Typus varietatis (M 6533) a R. Singer in Chile, Coquimbo, Fray Jorge, 16–IV–1967 lectus et in Herbario SGO conservatus est.

RHODOPHYLLUS LAZULINUS (Fr.) Quél., Enchir. p. 60. 1886.

Material studied: CHILE: Chiloe: Pudeto, 9–V–1967, M. Singer & P. Hernandez, comm. Singer M 6791 (SGO).—ARGENTINA: Rio

Negro: Lago Moreno, 22–XI–1964, Singer M 4066 (BAFC).—Lago Nahuel Huapí, near Santa María, 9–IV–1965, Singer M 5074 (BAFC).—Neuquén: Angostura, 18–IV–1965, Singer M 5031 (BAFC).

Rhodophyllus cryptochrous Sing. spec. nov.—Pileo fuligineo-atro, subfibrilloso, ad marginem partim griseo, haud viscoso, convexo mox applanato, 37 mm cc. lato.—Lamellis grisello-violaceis, ad aciem atris, latis, ventricosis, confertis, rotundato-adnexis vel sinuatis.—Stipite aerugineo, glabro, aequali, cc. 22 × 4.5 mm.—Contexto inodoro.—Sporis 9–11 × 6.5–7 μ, angularibus, axialiter symmetricis, stramineo-carneolo-hyalinis.—Hymenio e basidiis efformato et cheilocystidiis marginato. Basidiis 25–32 × 10–10.5 μ, ad basin defibulatis, tetrasporis. Cheilocystidiis 38–51 × 4–9 μ, fusiformibus, multis etiam anguste ventricosis, hyalinis sed granulis caeruleis in aqua manifestis repletis, granulis in KOH melleo-hyalinis.—Hyphis tramatis hymenophoralis regularis, defibulatis, nonnullis atropurpureo-rubris in KOH e contentu granulari.—Epicute cutifirmi, membris terminalibus ascendentibus, his late rotundatis et 11–18 μ talis, pigmento vacuolari fusco repletis, in zona hypodermiali purpureo-rubris ita ut in tramate (KOH).—Ad humum in silva nothofaginea sparsa et mixta, autumno.—Typus (M 3646) a R. Singer in Argentina: Neuquén: Villa La Angostura, 29–IV–1964 lectus, in herbario BAFC conservatus est.

Rhodophyllus pumanquensis Sing. spec. nov.—Pileo azureo, fibrilloso, levi, convexo, dein applanato margine leniter recurvato, 12–17 mm lato.—Lamellis albis, dein roseis crassiusculis, distantibus, didymis, haud anastomosantibus, adnatis vel adnexis, angustis.—Stipite azureo apicem versus, sed in parte inferiore caerulescente-fusco, ad ipsam basin albo, 27 × 2 mm longo.—Carne inodora.—Sporis 7–10 × 6–9 μ, angulosis, stramineo-rosellis.—Hymenio e basidiis tantum consistente, eis 34–38 × 8–9 μ, (2)–(3)–4-sporis, basi fibulata; cystidiis et cheilocystidiis nullis.—Hyphis defibulatis.—Epicute pilei ex hyphis filamentosis, levibus, haud incrustatis repentibus efformata, haud gelatinosa.—Ad terram prope rivulam in silva inter muscos. Typus (SGO) a W. Lazo lectus prope Pumanque, provinciae chilensis Colchagua. 7–VIII–1967, no. PU-131.

RHODOPHYLLUS RUSTICOIDES (Gillet) Lange, Dansk Bot. Ark. 2(11): 40. 1921.

Material studied: ARGENTINA: Mendoza: Las Heras: Parque General San Martín, Golf Club, 2–X–1939, A. Ruiz Leal 6.248 (Herb. Ruiz Leal).

Rhodophyllus patagonicus Sing. spec. nov.—Pileo brunneo-griseo, in centro intensius grisello-fusco, subviscidulo, convexo-umbilicato, margine incurvato, glabro, interdum papillato, 18–21 mm lato.—Lamellis albis, dein pallide grisello-rosellis satis angustis, subconfertis vel moderatim confertis, late adnexis vel leniter sinuatis; aciebus siccando interdum leniter obscuratis sed vix vere discoloribus.—Stipite pileo concolori, glabro, sed plus minusve longitudinaliter innate sericeo-striatello, pro ratione longo, 50–71 × 2–3 mm; mycelio basali albo.—Contexto odore subfarinaceo-pepino gaudente.—Sporis 8.2–10.8 × 7.2–10 μ, nonnumquam brevibus e.gr. 8.3 × 7.5 μ, nonnumquam longiusculis e.gr. 9.5 × 7.2 μ, (4)–5–(7)-angulosis, axialiter symmetricis.—Hymenio e basidiis efformato. Basidiis 36–44 × 9.5–10 μ, tetrasporis, ad basin fibulatis. Cheilocystidiis et pleurocystidiis nullis.—Hyphis defibulatis (omnibus?), hyphis oleiferis 2.5–3 μ latis.—Epicute ex hyphis appressis elongatis, subtiliter granulatis pigmento epicellulari brunneolo-fuscidulo, defibulatis efformata.—Ad humum in silvis mixtis nothofagineis.—Typus (M 3099) a R. Singer in Argentina: Rio Negro: Laguna Frías, 21–III–1963 lectus et in BAFC conservatus est.—Leptoniellae subfloridanae Murr. (Mycologia 43: 238. 1951) affinis.

Rhodophyllus sericeus (Bull. ex Fr.) Quél., Enchir. p. 59, 1886.

Var. **antarcticus** (Sing.) Sing. comb. nov.

Acurtis sericeus var. *antarcticus* Sing., Mycologia 51: 587. 1959.

Description see Singer, l.c.—Subantarctic form.

Var. **sericeus.**—With us, the pileus is obtuse, umbilicate or not, in one collection only 13 mm in another 50 mm broad. Spores rather short: 7.5–9 × 6.5–7.8 μ. Hyphae with or without scattered clamp connections, basidium constantly with clamped base. This fungus grows in moist and shady woods (with *Nothofagus dombeyi*) on the humus and the earth, the spring form being smaller, the fall form larger. These were compared with typical specimens collected by the author in Europe.

Material studied: CHILE: Valdivia: Cordillera Pelada, east slope, Chivería, 10–V–1965, Singer M 5715 (BAFC).—ARGENTINA: Neuquén: Villa La Angostura, Selva Triste, 8–XI–1966, Singer M 6035 (BAFC), spring form.—SCOTLAND: Oreby Bridge, among lichens over peat, 5–VIII–1964, Singer C 4021 (BAFC).

RHODOPHYLLUS POLITUS (Pers. ex Fr.) Quél., Enchirid. p. 62. 1886.

As for the concept of the type of this species, see Persoonia 2: 39, fig. 27 (p. 37), 1961.

Material studied: ARGENTINA: Neuquén: Rincón, 13–III–1963, Singer M 3535 (BAFC).—EUROPE: Type (or authentic material) in Persoon Herbarium (L).

Rhodophyllus pruinosipes Sing. spec. nov.—Pileo fusco, hygrophano, dehydratatione in vegetis innate radiatim striato, usque ad sordide-pallidum pallescente, glabro, in siccis leniter tomentosulo apparente, neque viscido neque nitente, in humidis leniter pellucide striatulo ad marginem, convexo dein applanato, neque papillato neque umbilicato sed in siccis obtuse subumbonato, 22 mm cc. lato.—Lamellis sordide grisello-fuscis, latis, subventricosis vel ventricosis, crispulis, subconfertis vel subdistantibus, subliberis.—Stipite fusco vel subfuligineo, ex integro fibrilloso-pruinato (e fibrillis minutis hyalinis), aequali sed ad apicem interdum dilatato, 36 mm cc. longo et 2–3 mm lato.—Contexto inodoro. —Sporis 8–9.5 × 7–8.5 μ, frontaliter formulam benzolicam abbreviatam in mentem revocantibus, hexagonalibus, membrana mediocriter (pro genere) crassa institutis, axialiter symmetricis.—Hymenio e basidiis efformato. Basidiis tetrasporis, nonnullis ad basin fibulatis, nonnullis defibulatis. Cystidiis nullis.—Hyphis stipitis defibulatis.—Epicute pilei cutiformi, ex hyphis filamentosis, granulis fuscis pigmenti incrustatis efformata. Stipitis pruina ex hyphis superficialibus nata, ampullaceis, cc. 42 × 8.5 μ, apice 5 μ diam., hyalinis.—Ad basin trunci emortui in silva Nothofagi dombeyi et Austrocedri chilensis, autumno.—Typus (M 3272) a R. Singer in Argentina: Neuquén: Puerto Manzano, 5–IV–1963 lectus et in BAFC depositus.

Rhodophyllus fuscifolius (Peck) Sing. comb. nov.

Nolanea fuscifolia Peck, Ann. Rep. N. Y. St. Mus. 54: 147. 1901.

We have studied the type before it was possible to obtain data as complete as they are needed now. Although we believe that our material is identical with the North American one, we give our own description:

Pileus fuliginous, strongly hygrophanous, fading to pallid, smooth or vaguely striate when wet, conic or campanulate, acutely papillate, 14 mm high, 12 mm broad.—Lamellae deep fuscous-grayish, close, ascendant, narrow, finely intervenose, adnate with a tooth.—Stipe fuliginous-gray, subequal with an indistinct thickening at the base, silky, with pruinate apex at first, with white mycelioid base, 40 × 2 mm.—Context hygrophanous, inodorous.

Spores 8.5–10 × 7.6–8.1 μ, rather short, with somewhat raised-angular corners, 7–8 of them, stramineous-carneous, with moderately thin wall, axially asymmetric.—Basidia 54–63 × 11.2–12.2 μ, hyaline, 4-spored. Cheilocystidia none or very scarce. Pleurocystidia absent.—Hyphae of

the regular hymenophoral trama with or without clamped septa (basidia also with or without basal clamp, but mostly with basal clamp), accompanied by oleiferous hyphae.—Epicutis of pileus a cutis which is fuliginous, not or very slightly incrusted by pigment, hyphae strictly repent and smooth; no dermatocystidia here. The pruina of the stipe apex consisting of characteristic connivent or divergent bunches of dermatocystidia, these hyaline, 49–86 × 6–7 μ, fusoid-ventricose or cylindric below and effilate into a long thin (2–3.2 μ) neck which at the tip may be not broadened, or may be subcapitate (capitulum then 2.5–3.2 μ broad).

On dead wood of logs of either *Nothofagus dombeyi* or *Austrocedrus chilensis*, fruiting in fall.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, 8–IV–1963, Singer M 3333 (BAFC).

RHODOPHYLLUS STRICTIOR (Peck) Sing. Lilloa 22: 617. 1951.

We have seen but not restudied lately the type of *Agaricus strictior* Peck. Therefore, we add the description of what we believe to be that species. [1])

Pileus horn gray or cinnamon gray, hygraphanous, faded to a light dull gray, long transparently striate when wet, smooth, not viscid, glabrous, conic-convex with obtuse center, soon convex and subumbonate, even umbonate, but umbo broad and obtuse, 37–38 mm broad.—Lamellae whitish gray, eventually reddish-grayish, rather broad, ventricose when mature, 5 mm broad where broadest, close or subclose, rounded and narrowly adnexed.—Stipe concolorous with the pileus, hygrophanous, pallescent, longitudinally striatulate by innate-appressed silky fibrils, about 75 mm long, and tapering from a broadly rounded 6 mm broad base to a approximately 4 mm broad apex.—Context hygrophanous; odor none; taste mild.

Spores 10.5–13 × 6.2–10 μ, usually cubic but with basal tetrahedron attached to them so that they appear moderately elongated and mainly 5-angled, but some with additional nodose angles, stramineous-flesh-colored, with moderately thin wall.—Basidia 30–45 × 10–13 μ, 4-spored, perhaps some 2-spored also present, with or without a basal clamp, slightly more frequently without a clamp. Cheilocystidia and pleurocystidia none.—Hyphae without clamp connections.

On the ground in mixed forest of mainly *Nothofagus dombeyi* and *Saxegothaea*, fruiting in spring.

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[1]) Material determined so from the Great Smoky Mts. by Dr. Hesler has less gray pileus and somewhat more acute center.

Material studied: ARGENTINA: Neuquén: Los Cántaros, 20–XI–1954, Singer M 4058 (BAFC).

Rhodophyllus mesites Sing. spec. nov.—Pileo griseo, subhygrophano, glabro, per medium radium pellucide striato, convexo, umbonato, dein circa umbonem applanato, 18 mm cc. lato.—Lamellis griseis, subangustis, subconfertis, satis anguste sinuatis.—Stipite griseo, sericeo-striato fibrillis sericeis innatis, aequali, cc. 37 × 2 mm.—Contexto inodoro vel subinodoro.—Sporis 8.5–10.3 × 6.7–9 μ, plerumque 8.5–10 × 7.3–8,2 μ, plerumque formulam benzolicam forma sua in mentem revocantibus, hexagonalibus, rarius 5–7-angularibus, membrana moderatim tenui stramineo-carneola vel subhyalina praeditis.—Basidiis 37–42 × 10.5–11 μ tetrasporis, ad basin fibulatis.—Hyphis defibulatis.—Epicute pilei hyalina vel subhyalina, cutiformi, ex hyphis filamentosis, levibus, haud gelatinosis, 2.5–5 μ latis efformata. Hypodermio cutiformi, sed latissimo, (haud gelatinoso), cutiformi, ex hyphis latissimis (20–85 μ latis) eas Mycenarum in mentem revocantibus, pigmento fuscidulo intracellulari aequaliter impletis, pigmento dissoluto, incrustatione nulla vel persparsa subhyalina tectis efformato. Hyphis olieferis cum superficie pilei parallelis, 3.5–4 μ latis, filamentosis in hypodermio et tramate pilei numerosis vel modice disseminatis.—Ad terram et humum in silvis nothofagineis.—Typus (M 3534) a R. Singer in Argentina: Neuquén: Rincón, 13–III–1963 lectus et in BAFC depositus.

Rhodophyllus dissimilis Sing. spec. nov.—Pileo fusco, sordide fusco vel atrofusco vel griseofusco (e.gr. "bark", "coffee" M & P), hygrophano, dehydratatione usque ad grisellum pallidum vel sordidum pallescente, glabro, levi, estriato vel usque ad tertiam partem radii pellucide striatulo in humidis, conico, aut subacuto vel acuto aut papilla acuta, rarius subacuta vel obtusa ornato, demum applanato vel interdum concavo sed papilla persistente, 12–34 mm lato.—Lamellis griseis vel griseo-fuscidulis vel sordide fuscidulo-brunneis, dein sordide roseolo-carneis, latis vel rarius subangustis, saepe ventricosis, subconfertis vel subdistantibus, adnexis, rotundato-adnexis, rarius rotundato-adnatis.—Stipite griseo vel fusco (e.gr. "Chukker br." vel "racquet" M & P), rarius pallidiore, omnino glabro, aequali, 30–52 × ± 2 mm.—Contexto inodoro.—Sporis 7.5–14 × 5.8–8.8 μ, plerumque 9–10 × 7–7.7 μ, plerumque forma sua formulam benzolicam in mentem revocante, hexagonis angulis frequenter subobtusatis, sed etiam frequenter acutatis, rarius 5–7 angulosis, interdum dihedrale basali haud manifesto sed plerumque axialiter symmetricis, stramineo-carneis, membrana subtenui institutis.—Hymenio e basidiis efformatis et cheilo- atque pleurocystidiis absentibus. Basidiis 30–43 × 9–11 μ, tetrasporis,

clavatis, omnibus vel multis fibula basali gaudentibus.—Hyphis ad septa fibulatis vel defibulatis, plerumque fibulatis, rarius plerumque defibulatis. —Epicute pilei cutiformi, ex hyphis parallelis, mediocriter latis, pigmento intracellulari dissoluto fuscidulo impletis et multis pigmento membranali et incrustante brunneo etiam ornatis efformata, haud gelatinosa, sat lata. —Ad terram et humum in silvis Nothofagi (*N. pumilio, N. dombeyi*) solitario vel gregatim, autumnalis.—Typus (M 3487) in Argentina, 25–IV–1964 a R. Singer lectus et in BAFC depositus.

Material studied: ARGENTINA: Neuquén: Lago Correntoso, 25–IV–1964, Singer M 3487 (BAFC), typus.—Cerro Cortinario above Puerto Manzano, 1100 m alt., 26–IV–1964, Singer M 3502 A (BAFC).—Rio Negro: Cerro Catedral, 29–IV–1965, Singer M 5349 (BAFC).

Var. *DISSIMILIS*. The above description refers to this (type) variety.

Var. **aporpus** Sing. var. nov.—A var. *dissimili* differt stipite subpallidiore (non albo, sed pallido); hyphis et basidiis defibulatis; epicute pallida; sporis ut in var. dissimili.—Ad humum in silva anectotrophica nebuligena sub Aextoxico punctata.—Typus (M 6526) a R. Singer in Chile: Coquimbo: Fray Jorge, 16–IV–1967 lectus et in SGO depositus.

RHODOPHYLLUS NITENS (Velen.) Kühner & Romagnesi sensu Kühner & Romagnesi, Flore anal. Champ. Sup. p. 190. 1953.

Var. *NITENS*.

Pileus fuscous, hygrophanous, one half to three quarters of radius transparently striate when wet, much paler when dehydrated, glabrous, not viscid, smooth, conic then conic-convex, papillate by a thin, distinct, subacute or acute papilla, 21–42 mm broad, 21–22 mm high.—Lamellae pale grayish or grayish-sordid pallid, then sordid-pink, with non-discolorous edges, at first narrow, later broad, close or subclose, at first ascendant, rounded-adnexed or narrowly adnexed.—Stipe at first pale gray or concolorous with the pileus to somewhat paler than the latter, later always so (grayish fuscous), glabrous, more or less innately pallid-silky striped, not pruinose, equal, 40–70 × 2–3 mm; basal mycelium white. —Context partly or entirely concolorous with surfaces, hygrophanous, rather thin, inodorous.

Spores 8.5–10 × 7–9 μ, with 2–4, mostly 4 sharp angles and some rounded angles, somewhat elongated, with moderately thin but not thick walls, subhyaline to stramineous-flesh color, with well visible basal dihedral in most.—Basidia 27–37 × 9.5–10.5 μ, 4-spored, with basal clamp. Cheilocystidia present, but generally scarce and easily overlooked, 24–34

× 7.5–10 μ, elongate-ventricose or clavate, with a short subacute mucro, hyaline. Pleurocystidia none.—Hyphae in hymenophoral trama mostly clamp-bearing, some septa without clamps.—Epicutis of pileus in form of a cutis, not gelatinized, hyphae here with dissolved intracellular fuscidulous pigment, not incrusted, some with internal light colored or hyaline amorphous bodies, with rounded tips at the terminal members; no dermatocystidia. Stipe also without dermatocystidia, even at apex.

On earth and humus in mixed woods, gregarious, fruiting in fall.

Material studied: CHILE: Valdivia: Cordillera Pelada, Chivería, 10–V–1965, Singer M 5725 (BAFC).—Probably same: ARGENTINA: Neuquén: Puerto Manzano, 14–III–1963, Singer M 3539 (BAFC).—CHILE: Colchagua: Pumanque, 3–X–1966, Lazo PU-40 (SGO).

Var. **defibulatus** Sing. var nov.—A var. *nitente* absentia fibularum ad basin basidiorum nec non in hyphis distinguitur. Sporis interdum leniter majoribus.—Ad terram in silvis nothofagineis (*N. obliqua*), autumno.—Typus a R. Singer (M 6892) in Chile lectus et in SGO conservatus.

Material studied: CHILE: Valdivia: Cuesta Santa Elvira, 14–V–1967, Singer M 6892 (SGO), typus varietatis.—Probably also here: Cordillera Pelada, west slope at 880 m, 29–III–1963, Singer M 3225 (BAFC).—West slope at 420 m alt., 7–V–1965, Singer M 5470 (BAFC).—Santiago: Cerro Robles, 19–VI–1967, Singer M 6972 (SGO), carpophores smaller in this winter form.

RHODOPHYLLUS DYSTHALES (Peck) Romagnesi, Prodr. Fl. Myc. Madag. 2: 22. 1941.

Material studied: ARGENTINA: Neuquén: Quetrihué, 21–IV–1965, Singer M 5129 (BAFC).

RHODOPHYLLUS CHLOROPOLIUS (Fr.) Quél., Enchir. p. 61, 1886, sensu Romagnesi.

We shall give a description of our Southern collections:

Pileus dark gray, gray, or umber-bister, in the center slightly to strongly tomentose to scabrous-squamulose, not hygrophanous or slightly hygrophanous or at least pallescent in some collections drying out in radial lines, vaguely radially innately fibrillose or not, varying smooth to short or long sulculate, rarely very slightly and short (5 mm) transparently striatulate, appearing rivulose in the fresh condition in some cases, pulvinate-truncate to convex, flattened or depressed or umbilicate in the center, 15–32 mm broad.—Lamellae light cinereous to greyish avellaneous becoming pinkish, with deeper cinereous to fuscidulous edge when seen under a lens in dried condition, but sometimes many lamellae

with concolorous edge, medium broad to broad, arcuate, subclose to subdistant, rounded-adnate, adnate, or adnexed.—Stipe pallid, grayish white, or light cinereous, glabrous, naked, smooth, equal or slightly and gradually tapering upwards or downwards, hollow, 19–61 × 2.5–3 mm.—Context inodorous.

Spores 8–11 × 6.5–8 μ, elongate, axially symmetrical, with rounded protuberances and sinusses, subhyaline to stramineous-flesh color.—Basidia 25–44 × 8–10.5 μ, 4-spored, without basal clamp. Cheilocystidia 29–85 × 10–18 μ, hyaline or subhyaline and varying between ventricose, cylindric, ampullaceous and clavate, with broadly rounded tip, numerous along the edges or in isolated bunches, thin-walled. Pleurocystidia none, or like the cheilocystidia near the edge.—Hyphae without clamp connections.—Epicutis of pileus—a cutis, consisting of filamentous non-gelatinized, smooth hyphae up to 14.5 μ broad, but some in bunches ascendant, all with intracellular dissolved cinnamon brownish to brownish fuscidulous pigment and without incrustations, the terminal members of the ascending hyphae often assuming the shape of the cheilocystidia.

On earth banks and among mosses in anectotrophic forest, spring and fall.

Material studied: CHILE: Concepción: Boca del Bio-Bio, 11–XI–1967, Singer M 7822 (SGO).—ARGENTINA: Neuquén: Puerto Manzano, 22–IV–1964, Singer M 3401 (BAFC).—Quetrihué, 21–IV–1965, under *Myrceugenella* and *Austrocedrus*, Singer M 5127 (BAFC).

These specimens seem to be conspecific but differ from each other in minor features. Thus, M 7822, the spring form, has slightly hygrophanous pileus with slightly striate margin, the pigmentation of the epicuticular hyphae is cinnamon rather than fuscidulous in KOH. It may well be that this deserves to be separated as a special taxon. But also the collections M 3401 and M 5127 differ slightly since in the former the stipe is pallid, the edges of the lamellae not discolored to slightly discolored, and the pileus scarcely more than subglabrous in the center while in the latter the stipe is cinereous, the pileus tomentose in the center or even darker-scabrous-squamulose in the umbilicus and the lamellae scarcely discolored at the edges. At present we do not wish to elaborate on these small differences inasmuch as we know little about the variability of the species in Europe.

Rhodophyllus lacteoniger Sing. spec. nov.—Pileo nigro, glabro, levi, haud viscido, haud hygrophano, convexo, umbilicato, 11 mm cc. lato.—Lamellis lacteo-albidis, demum roseolis, latis, ad acies haud discoloribus, confertis vel subconfertis, rotundato-sinuato-adnatis.—Stipite ad apicem nigro, ad basin griseo, glabro, levi, aequali vel leniter apicem versus

attenuato, 14 × 4 mm cc.—Contexto inodoro.—Sporis 8.5–9.5 × 6.5–7 μ, angularibus, axialiter symmetricis, subhyalinis.—Basidiis 23–28 × 9–9.5 μ, tetrasporis, ad basin defibulatis. Cheilocystidiis 60–73 × 6–11 μ, cylindraceis vel cylindraceo-mucronatis, rarius cylindraceo-subcapitatis, obtusis, hyalinis, aciebus lamellarum heteromorphis, pleurocystidiis nullis. —Hyphis defibulatis.—Epicute pilei ex hyphis repentibus, radialiter dispositis, e pigmento vacuolari fuscis efformata.—Ad terram in silvis sparsis sub arbustis et nonnullis Nothofagis et Austrocedris.—Typus a R. Singer (M 3645) in Argentina: Villa La Angostura, provinciae Neuquén, 25–IV–1964 lectus et in BAFC conservatus est.

Rhodophyllus venezuelanus (Dennis) Sing. comb. nov.

Nolanea mammosa var. *venezuelana* Dennis, Kew Bull. 15: 153. 1961.

The following is a description of our Chilean material:

Pileus "Tuscan tan" M & P, hygrophanous, dried dirty pallid with fuscous stripes, center sordid pallid with sericeous covering, with sulculate margin, otherwise glabrous and smooth, but in dried material occasionally minutely and irregularly verruculose in places, convex, eventually with slightly depressed center, with a small but distinct central papilla, rarely without it, 8–9 mm broad.—Lamellae "beige" M & P, rather narrow to rather broad, distant, di-tri-dymous, adnate, spore print dirty pink.—Stipe paler than the pileus but not pallid, glabrous, about as long as the pileus diameter, up to 1 mm broad, equal; basal mycelium rather abundant, white.—Context hygrophanous, subconcolorous, thin, inodorous.

Spores 7–10 × 6–8 μ, rarely up to 10.5 × 8.5 μ, with five mostly distinct angles, some sometimes somewhat rounded, with round central oil drop, axially symmetric.—Basidia 21–35 × 9.5–10 μ, 4-spored, without basal clamp. Cystidia, even cheilocystidia, none or extremely scanty. —Hyphae without clamp connections.—Epicutis of pileus a non-gelatinized cutis, of narrow to rather broad filamentous hyphae, many of which have a very slight melleous incrustation in ammonia mounts, but intracellular pigment not distinct in this medium. Among dead dicotyledonous leaves fallen to the ground in wet forest around swampy areas.

Material studied: CHILE: Valparaiso: Quintero, 27–VI–1961, Singer M 7006 (SGO).

RHODOPHYLLUS aff. *SARCITULUS* Kühner & Romagnesi (? = *Entoloma mariae* Stevenson).

This species could not be properly identified. For the sake of completeness we give the descriptions of South American material of the

present species and the following one without having consulted the respective types.

Pileus "cochin" M & P but paler between the striae and darker in the umbilicus, innately fibrillose when seen under a lens, glabrous on the umbilicus, not viscid, shining when dry, convex, over more than half the radius transparently striate, when wet, very soon with a distinct but not acute umbilicus, about 23 mm broad.—Lamellae sordid, then sordid-pink, the edges never darkened or discolored, rather broad, subdistant, sinuate-adnate.—Stipe sordid gray with whitish base, glabrous everywhere, smooth, naked, equal, about 50 × 2.5 mm.—Context inodorous.

Spores 9.7–11.5 × 6.5–7.5 μ, elongated, with about seven nodulose-protruding often rounded angles and sinuate between them, axially symmetrical.—Basidia 35–38.5 × 10–10.8 μ, 4-spored, base not clamped. Cystidia and cheilocystidia none.—Epicutis of repent hyphae with distinct vacuolar pigment, no incrustations, without clamp connections.

Under *Austrocedrus chilensis* on the ground, solitary.

Material studied: ARGENTINA: Rio Negro: Lago Nahuel Huapí, near Santa María, 30–IV–1964, Singer M 3712 (BAFC).

RHODOPHYLLUS aff. *SARCITULUS* Kühner & Romagnesi (? = var. *majusculus* Kühner & Romagnesi =? *Entoloma procerum* Stevenson).

Description of Southern specimens:

Pileus fuscous to fuliginous-fuscous (e.gr. "burnt umber" M & P and darker), hygrophanous, glabrous, not viscid, over one third to two thirds of radius transparently striate, when wet, campanulate-conical and obtuse, later applanate and either with or without a very small and shallow umbilicus especially when dried, 27–37 mm broad.—Lamellae palest grayish then pinkish, broad, subclose, rounded and narrowly adnexed.—Stipe concolorous but paler than the pileus, even sordid pallid, splitting and becoming hollow, about 43 mm long and 2–6 mm broad.—Context inodorous.

Spores 10–12.5 × 6–10 μ, 4–6-angular, some with protracted nodose angles, elongated, not distinctly axially symmetric, some giant spores (16 × 10.5 μ) with thick walls, others with almost thin (normal) walls.—Basidia 28–37 × 9–12 μ (1–3)–4-spored or (2)–4-spored, without basal clamp. Cheilocystidia 30–55 × 4–7.5 μ, cylindric and often subcapitate at the apex, and then constricted (2.8–4 μ across) below tip, hyaline. Pleurocystidia none seen.—Hyphae without clamp connections.—Epicutis of pileus—a cutis with parallel hyphae which are elongated and contain only or practically only intracellular vacuolar or evenly dissolved pale brown or fuscous pigment.

In shady *Nothofagus* and wet myrtaceous woods on the ground.

Material studied: CHILE: Valparaiso: Quintero, 27–VI–1967. Singer M 7013 (SGO).—ARGENTINA: Neuquén: Lago Correntoso, 20–IV–1965, Singer M 5094 (BAFC).

RHODOPHYLLUS SUBSTRICTIOR Sing. in Sing. & Moser, Mycopath. & Mycol. Appl. 26: 184. 1965.

Description see there. The specimens aside from the type which were quoted in the paper cited above are either doubtful or not identical. The figure 19, p. 185 refers to the type.

Rhodophyllus substrictior differs from the preceding species in shorter striation of the pileus which is "biskra" and "dogwood" striped (M & P). tending to be subumbonate, in not being umbilicate, in pentagonal axially symmetric spores and complete absence of cheilocystidia.

It differs from *R. dissimilis* Sing. in the absence of incrusting pigment, and from both this and the *R. nitens* group in the absence of a papilla.

Rhodophyllus hololeucus Sing. spec. nov.—Pileo albo, glabro dein fibrilloso-subsquamuloso-subsquarruloso vel fortiter rivuloso, haud viscoso, haud vel perbreviter striato, convexo, dein applanato, centro demum ample depresso sed neque umbilicato neque umbonato neque papillato, 6–25 mm lato.—Lamellis albis, demum roseolis, satis latiusculis (usque ad 4 mm latis), subconfertis vel subdistantibus, sinuato-adnatis, adnexis, adnatis, demum saepe secedentibus.—Stipite albo, glabro, levi, aequali vel subaequali, 15–33 × 1–2.5 mm.—Contexto albo, immutabili, inodoro. —Sporis 9–12.5 × 5.8–8.5 μ, plerumque pentagonalibus, axialiter symmetricis.—Hymenio e basidiis tantum efformato. Basidiis 23–35 × 9.5–12.5 μ, tetrasporis, ad basin defibulatis. Cheilocystidiis et pleurocystidiis nullis.—Hyphis defibulatis, hyalinis, in tramate hymenophorali regulariter dispositis.—Epicute pilei cutiformi, paullum differentiata, hyalina, ex hyphis parallelis vel subparallelis (interdum in fasciculis ascendentibus), pigmento omnino destitutis (KOH) efformata; dermatocystidiis nullis. In stipitis superficie dermatocystidiis etiam absentibus.—Ad folia putrescentia in silva, maio.—Typus a R. Singer (M 6800) in Chile lectus et in SGO depositus.

Material studied: CHILE: Valdivia: Cordillera Pelada, east slope, at Chivería, 7–V–1967, under *Nothofagus alpina* and *dombeyi*, and *Podocarpus*, Myrtaceae etc., 7–V–1967, Singer M 6774 (SGO).—Llanquihue: 15 km northeast of Puerto Pargua, under *Eucryphia*, *Saxegothaea*, etc., 9–V–1967, Singer M 6800 (SGO) typus.

Rhodophyllus nubigenus Sing. spec. nov.—Pileo pallido, hygrophano, dehydratatione albescente, subtiliter sericeo-tomentoso praesertim in

centro ubi frequenter subflavescens est, adulto irregulariter lobato, convexo, umbilico abrupto praedito, 15 mm cc. lato.—Lamellis albis, dein roseolis, mediocriter latis, moderatim confertis, adnatis, partim decurrentibus.—Stipite albo, glabro, aequali, leniter ad basin attenuato, frequentius subaequali vel aequali, 24 × 1.5 mm cc.—Contexto albo, immutabili, fragili, inodoro.—Sporis 9.5–13.5 × 6.8–8.8 μ, plerumque heptagonis sed multis irregulariter sinuoso-angulatis vel nodoso-gibbosis angulis partim rotundatis, axialiter symmetricis.—Basidiis (an omnibus) bisporis, 40–42 × 11–1.27 μ, sterigmatibus tenuissimis, ad basin defibulatis. Cheilocystidiis fasciculatis, e.gr. 45 × 10 μ, basidiomorphis vel cylindraceo-clavatis, hyalinis.—Hyphis in tramate hymenophorali elongatis et defibulatis, hyalinis.—Epicute pilei ex hyphis repentibus, nonnullis ascendentibus, et tunc membris terminalibus cheilocystidiis similibus vel haud modificatis.—Ad humum solitario, sub arboribus variis in silva.—Typus (M 3180) a R. Singer in Argentina: Rio Negro: prope Paso de las Nubes, 24–III–1963 lectus et in BAFC conservatus est (sub nom. R. sericello aff.).

PAXILLACEAE

Cheimonophyllum

CHEIMONOPHYLLUM CANDIDISSIMUM (Berk. & Br.) Sing., Sydowia 9: 418. 1955.

Pileus pure white, glabrous to slightly subvelutinous, unpolished, smooth, not viscid, with circular, tongue shaped or reniform outline, often lobulate when old, 5–10 mm broad, convex, later often irregularly flattened.—Lamellae white, on drying mostly yellowish cream, rather narrow to medium broad, subclose, laterally concurrent.—Stipe either none, and pileus laterally attached, or short and representing a mere lateral extension of the pileus, white, subvelutinous, smooth.—Context submembranous, white, thin, unchanging, inodorous.

Spores 5.3–7.5 × 4.8–7.5 μ, rarely a few up to 8.2 μ long, subglobose to globose, in some collections not at all angular, in others tending to be somewhat rounded-angular, with thin walls which become thick in age, hyaline, smooth, homogenous, inamyloid, without germ pore or callus, with or more rarely without suprahilar applanation.—Hymenium consisting of basidia margined by a broad band of cheilocystidia, some of which also occur near the edge, scattered and sparse, as pleurocystidia. Basidia 18–27 × 5–7.5 μ, 4-spored, clavate, with or without elongated oil droplets.

Cheilocystidia 20–66 × 1.2–6 μ, narrowly filamentous to narrowly fusoid or subulate, or thickened below and there clavate-ventricose or ventricose-fusoid, or broadly cylindrical, with narrowed filamentous apex with acute tip, or some with obtuse tip, sometimes forked above, or even with several apices, very numerous, hyaline, some of them are scarcely modified tramal hyphae piercing the hymenium.—Hyphae filamentous, not at all gelatinized, hyaline, with clamp connections, inamyloid, varying from vaguely bilateral (of the *Pseudohiatula*-type) to strictly regular in the hymenophoral trama, mostly thin-walled, subhymenium denser than trama, of filamentous elements, hyaline.—Epicutis of the pileus a trichodermium of interwoven (or plastered down) hyphae which are hyaline, non-gelatinous and originally form a very loosely woven trichodermium, filamentous, 0.5–2 μ broad, often running in strands of subparallel filaments, often branching, the uppermost often with short excrescencies which are also filamentous and sometimes forked, erect or ascending, wall generally thin, occasionally slightly thickened.

On trunks and fallen branches of hardwood (*Nothofagus, Fagus, Quercus, Alnus, Castanea, Weinmannia, Drimys*), mostly gregarious.

Material studied: CHILE: Valdivia: Cuesta Santa Elvira, 15–V–1967, Singer M 6921 (SGO).—VENEZUELA: Mérida: Sierra Santo Domingo, Laguna Negra, 27–VII–1958, Dennis 2507 (K).—TRINIDAD: Nonpareil, Sangre Grande, 19–X–1949, Dennis 208 (K).—Also North American material including the type (see Sydowia 9: 418. 1955).

Hygrophoropsis

HYGROPHOROPSIS AURANTIACA (Wulfen ex Fr.) R. Maire in Martin-Sans, L'empoisonnement p. 99. 1929.

Description see Nov. Hedwigia 7: 98. 1964.

In addition to the material indicated l.c., also in Chile: Valdivia: Cordillera Pelada, east slope, Chivería, 31–III–1963, Singer (BAFC).

Paxillus

PAXILLUS BOLETINOIDES Sing. in Sing. & Digilio, Lilloa 25: 431. 1951.

Var. *BOLETINOIDES:* Description see Nov. Hedwigia 7: 101. 1964.

Var. *LEUCOPUS* Sing. Nov. Hedwigia 7: 104. 1964. Description see there.

PAXILLUS PANUOIDES (Fr. ex Fr.), Epicr. p. 318. 1938.
Description see N. Hedw. 7: 105. 1964.
F. *IONIPUS* (Quél) Joss. (cf. Pilát, Česk. Mykol. 9: 180. 1955) was found in Argentina, near Laguna Frías, Río Negro, Singer M 3141 (BAFC).

PAXILLUS INVOLUTUS (Batsch ex Fr.) Fr., Epicr. p. 317. 1838.
Description see N. Hedw. 7: 108. 1964.
This species occurs in our region only adventitiously.

PAXILLUS DEFIBULATUS Sing. in Sing. & Digilio, Lilloa 25: 434. 1951.

Var. *DEFIBULATUS:* Description see Nov. Hedwigia 7: 111. 1964.

Var. *UNICOLOR* Sing. l.c. p. 436. Description see in Nov. Hedwigia 7: 112. 1964.

PAXILLUS MUELLERI Berk. Journ. Linn. Soc., Bot. 13: 159. 1874.
On this species and on *Flammula statuum* see Nov. Hedwigia 7: 113. 1964.

BOLETACEAE

Suillus

Species of this genus are found in the southern regions but principally only *S. aeruginascens* and *S. luteus*. As for keys, description and illustrations of these species, see Singer, Die Pilze Mitteleuropas V, Die Röhrlinge I, Bad Heilbrunn 1965. All species grow with Pinaceae, and are here adventicious.

Xerocomus

Species of this genus are found in the southern regions, but principally only *X. chrysenteron*, especially the red form which is often called *B. versicolor* by European mycologists. In our regions they grow rarely, under *Eucalyptus* and *Salix*, always adventitious. Care should be taken not to look for *B. loyo* in this genus.

Boletus

BOLETUS LOYO Philippi ex Speg., An. Mus. Nac. B. A. 8: 5. 1912.
Description of this species with colored plate see Nov. Hedw. 7: 125, pl. 11, fig. 5, 1964.

BOLETUS CHILENSIS Sing. Biologica, Univ. Nac. Chile 41: 69. 1968.
Description and illustration see there.

Leccinum

Species of this genus occur occasionally, adventitiously, in planted stands of *Populus, Quercus, Betula.* As for their identification and description and illustration see Singer, Die Pilze Mitteleuropas VI, Die Röhrlinge II, Bad Heilbrunn 1967.

RUSSULACEAE

Russula

RUSSULA FUEGIANA Sing., Rev. Mycol. 15: 125. 1950.
Description see there.

Russula austrodelica Sing. spec. nov.—Pileo albido, dein partim pallide coriaceo-alutaceo, impolito, sicco, convexo, mox centro depresso vel infundibuliformi, 50–110 mm lato.—Lamellis cremeis, intermixtis, furcatis, angustis vel latiusculis, arcuatis vel descendentibus, confertis vel subconfertis, decurrentibus. Sporis in cumulo cremeis (= "C" Crawshay, = IIc Romagnesi in vegetis haud dehydratatis).—Stipite albo, interdum subruguloso, interdum ad apicem leniter subcaerulescente, subaequali, 40–45 × 15–20 mm.—Contexto albo, immutabili; sapore acri, odore in adultis piscino.—Sporis 8.5–10.2 × 6.5–8.8 μ (ornamentatione exclusa 8–9.5 μ longis), ornamentatione exosporiali typi IV (spinulis vel verrucis 0–0.7 μ projicientibus et paucis lineis tenuissimis connexis), raro typi IIIb, II–IV, IX, vix alta gaudentibus.—Basidiis 56–70 × 11.2–12.2 μ, (1)–(2)–(3)–4-sporis vel omnibus tetrasporis, clavatis. Macrocystidiis 47–77–(134) × 4–11 μ, ad aciem et latera lamellarum numerosis, versiformibus, plerumque cylindraceo-subventricosis vel ventricosis, acutis vel obtusis, intus

contento in sulfovanillina caerulescente repletis.—Hyphis defibulatis, in tramate hymenophorali intermixto (cum sphaerocystibus), subhymenio ex elementis parvis, irregularibus composito sed vix vere cellulari; hymenopodio ex hyphis axialiter currentibus efformato.—Epicute pilei ex hyphis irregularibus efformata, hyphis oleiferis praesentibus, haud gelatinisatione separatis.—Ad terram in silva nothofaginea sub Nothofago obliqua, dombeyi, autumno.—Typus (M 6544) a R. Singer in Chile lectus et in herbario SGO conservatus est.

Material studied: CHILE: Valdivia: Cuesta Santa Elvira, 27–IV–1967, R. Singer M 6544 (SGO), typus.—14–V–1967, Singer M 6884 (SGO).

What appears to be the same species in my Florida, U.S.A., collections has the following chemical characters: Phenolaniline: Rapidly red on context.—$FeSO_4$: slowly and slightly pinkish gray. However, in these collection the spores were found to be variable between "B" and "C" of Crawshay. They came from Miami, Dade Co. and were collected in fall 1942 in subtropical hammock under oak and pine (*Quercus laurifolia* and *Pinus caribaea*).

R. austrodelica does not coincide with any of the species described by either Shaffer (Mycologia 56: 202–231. 1964) or Romagnesi (Les Russules, 1967). The odor and taste, spore print color, low ornamented spores are characteristic.

RUSSULA NOTHOFAGINEA Sing., Rev. Mycol 15: 127. 1950, var. *nothofaginea.*

Description see there.

We find this species rather frequently all over the *Nothofagus* region, and connected by ectrotrophic mycorrhiza with nearly all known species of *Nothofagus* in South America.

Russula nothofaginea var. **carminea** (Sing.) Sing. comb. nov.

Russula nothofaginea f. *carminea* Sing. l.c. p. 448.

Description see Singer, l.c. The variety is also widely distributed.

RUSSULA MALLOPHORA Sing., Rev. Mycol. 15: 130. 1950.

Description see there.

RUSSULA MAJOR Sing., Sydowia 8: 153. 1954.

Description see there.

This is the showiest of our South American *Russulae*, quite similar in appearance to *R. olivacea*, but spore print much paler, and chemical characters also different. We have not found it in Tierra del Fuego, but in the Chilean provinces of Llanquihue, Valdivia, and north, this species is quite common under *Nothofagus dombeyi, alpina* and others.

Lactarius

Species of this genus do not occur naturally south of the area of *Alnus jorullensis*. However, we have collected two adventitious species, *Lactarius deliciosus* under pine, and *L. piperatus* under poplar, in plantations.

BONDARZEWIACEAE

Bondarzewia

BONDARZEWIA GUAITECASENSIS (Henn.) J. E. Wright apud Sing., Sydowia 17: 12. 1964.

Description see Mycologia 45: 884. 1953 under the name *Bondarzewia perniciosa* Sing., a synonym. The species occurs frequently in the region, being a common root parasite of *Nothofagus dombeyi, N. alpina, N. obliqua, N. nitida,* and probably other species.

The fresh fruiting bodies when bruised, have abundant white latex which is acrid, unchanging, milky.

Appendix 1.

GASTEROMYCETES

HYMENOGASTRINEAE

Hydnangium

This genus has not been found to occur spontaneously in our region, but *Hydnangium soederstroemii* is at times found, introduced with *Eucalyptus* spec. in plantations. Cf. Mem. Torr. Bot. Cl. 21: 4. 1960 and Bol. Soc. Arg. Bot. 10: 55. 1962.

As for *H. thaxteri* Zeller & Dodge, see Bol. Soc. Arg. Bot. 10: 55. 1962, and here under *Martellia thaxteri* Sing.

Hybogaster

HYBOGASTER GIGANTEUS Sing., Sydowia 17: 13. 1964.
Description see there.

Cystangium

CYSTANGIUM DEPAUPERATUM Sing. & Smith, Mem. Torr. Bot. Cl. 21: 69. 1960.
Description see there. Cf. also Horak, Sydowia 17: 209. 1964.

Elasmomyces

ELASMOMYCES NOTHOFAGI Horak, Sydowia 17: 211. 1964.
Description and illustration see there. Unknown to the present author.

Martellia

Martellia thaxteri Sing. spec. nov.—Gastrocarpio forma magnitudineque Martelliam albellam in mentem revocante, sicco pileum Russulae ochroleucae in mentem revocante, basi sterili subobsoleta praedito.—Peridio

albo vel albido in vegetis, exsiccando ochroleuco, glabro, sicco, haud viscido, levi vel sublevi.—Gleba loculis irregularised exiguis haud lamellariter dispositis instructa, albida.—Stipite nullo, columella nulla.— Contexto albo, immutabili, inodoro.—Sporis 10–13 × 10–12 μ, globosis rarius subglobosis (e.gr. 13 × 11.8 μ), pallide flavidulis in ammoniaco, appendice hilari centraliter vel excentrice disposito et ornamentatione exosporiali amylacea ornatis, hac supra spinis 1.2–1.7 μ altis fundamentalibus superimposita et eas complete vel partim obtegente, spinulis isolatis typi VI, et ex ea re echinatis.—Hymenio e basidiis tantum efformato. Basidiis 35 × 10.5 μ, tetrasporis. Cystidiis et macrocystidiis nullis; laticiferis nullis visis.—Hyphis defibulatis, inamyloideis, tramate hymenophorali regulari, in mediostrato tenui hyalino; subhymenio e sphaerocystibus voluminosis, hyalinis efformato, lato, sed hyphis mediostrati filamentosis intertextis.—Epicute peridii ex hyphis appressis elongatis hyalinis vel pallide flavidulis efformata; tramate subjacente ex hyphis intermixtis cum elementis catenulatis tumescentibus eas hypodermii Mycenarum in mentem revocantibus efformato.—Ad terram in quisquiliis subhypogaee sub Nothofagis dombeyi et Fitzroyis loco humido et umbroso, autumno, praecociter.—Typus (M 3183) a R. Singer in Argentina: Rio Negro: inter Laguna Frías et Paso de las Nubes 24–III–1963 lectus et in herbario BAFC conservatus est.

This might well be the same as *Hydnangium thaxteri* Zeller & Dodge, An. Miss. Bot. Gard. 22: 373. 1935 from a dry hilltop at Concepción, Chile, assuming that the spores are amyloid and that the color is neither pink nor red when fresh, and that Thaxter's color indications refer to *Rhizopogon occidentalis* rather than to the "*Hydnangium*". Since we have not personally studied the type, we described this as a new species.

MARTELLIA ALVEOLATA (Cooke & Mass.) A. H. Smith, Mycologia 54: 630. 1962.

Gastrocarp potato-shaped with sterile base, 26 × 23 × 18 mm.—Deridium white, at maturity partly brownish (12–E–12, M & P), glabrous, thin and more or less evanescent in upper part of gastrocarp, there exposing the gleba in most specimens.—Gleba small-lacunose, never lamellarly radiating, "maple" color, with whitish tramal plates, fleshy, where exposed tending to become caesious.—Stipe none. Columella none, but from the white sterile base some branchlets of tramal plates originating but these rather thin, often indistinct, and never percurrent.—Context white, unchanging, without cavitier, fleshy, inodorous, mild to the taste.

Spores 8.5–11–(12) × 6.5–10 μ, globoso to slightly elongated (e.gr. 9 × 8.5 μ and 9.5 × 6.5 μ respectively), with rather short obtuse to more often acute (up to 2.5 μ long) hilar appendage which is centrically or

excentrically attached, with coarse inamyloid fundamental ornamentation covered by amylaceous exosporial ornamentation, typ IV, V, IV–II, the spines coarse and broad or dense and small, 0.3 × 1.2 μ projecting, cream-hyaline in KOH.—Basidia 24–32 × 12–15 μ, bisporous, hyaline; basidioles short cylindric, short clavate or rarely ampullaceous or subulate-obtuse. Where the hymenophore is exposed, scattered and inconstant cystidia (e.gr. 63 × 8 μ), subventricose below and long-effilate above, hyaline, thin-walled, or with slightly thickened walls, without contents or incrustation, are seen, but otherwise without cystidia or macrocystidia. —Hyphae without clamp connections, inamyloid. Subhymenium cellular, made up of mostly small spherocysts; mediostratum slightly gelatinized, of elongated multi-septate hyphae, hyaline, occasionally a swollen element reaching up to 11 μ diameter.—Epicutis of peridium partly distinctly gelatinized, of periclinal hyphae 0.5–2.5 μ broad with thin to slightly thickened wall which is hyaline or pale melleous, also some elements similar to primordial hyphae which have a slight and thin granular pale melleous incrustation; dermatocystidia none. In the tramal layer underneath the hyphae are filamentous, with occasionally some swollen element up to 11 μ diameter visible, but here as in the hymenophoral trama no true spherocysts present, the trama proper not gelatinized.

Under *Nothofagus obliqua* var., semihypogeous in sandy earth, late fall.

Material studied: CHILE: Santiago: Cerro Robles, 19–VI–1967, Singer M 6980.

MARTELLIA ALBELLA Sing. & Smith, Mem. Torr. Bot. Cl. 21: 38. 1960.

Description see there. See also Horak, Sydowia 17: 206. 1964.

MARTELLIA PTEROSPORA Horak, Sydowia 17: 310. 1964.

Description see there. Unknown to me.

Rhodogaster

RHODOGASTER CHILENSIS Horak, Sydowia 17: 190. 1964.

Description see there.

Gautieria

GAUTIERIA FUEGIANA Horak, Sydowia 17: 308. 1964.

Description see there.

Octavianina

OCTAVIANINA CHILENSIS Horak, Sydowia 17: 311. 1964.
Description see there.

Rhizopogon

There are species of *Rhizopogon* occurring in Southern South America, but we believe that they are all introduced with pine plantations.

Paxillogaster

PAXILLOGASTER LUTEUM Horak, Nov. Hedwigia 10: 332. 1966.
Description see there.

Austrogaster

Austrogaster baeospermum Sing. spec. nov.—Gastrocarpio submitriformi, umbilicato ad apicem, truncato subtus, 13 mm cc alto, 9 mm cc. lato.—Peridio in sicco apicem versus leniter plicato, ceterum levi, in siccis intense coriicolori vel sepiaceo-brunneo, glabrato, haud viscoso.—Gleba superficie peridii dilutiore, irregulariter lacunosa.—Stipite concolori, sicco, aequali, levi, glabro, cc. 9 × 1.5 mm, velo nullo. Columella stipitem continuante, percurrente, aequali (1.5 mm cc. lata).—Contexto peridii pertenui.—Sporis 8–11 × 5.5–7.5 μ, ellipsoideis, appendice hilari centrali vel interdum leniter excentrice applicato, membrana complexa instructis, perisporio hyalino, frequenter disrupto et verruciformi, rarius applicato et levi aut diagonaliter rupto, multis sporis e perisporio asperulis, episporio heterogeneo, stramineo, ornamentatione typi XI, subtili ornatis, spinulis cristulisque finissimis, colore haud vel vix contrastantibus, frequenter vix visibilibus, subtiliter punctulatis, et in spatio inter episporium et perisporium vix vel paullum projicientibus, immersis, endosporio crasso, apice sporarum haud modificata et disco levi suprahilari haud praesente.—Basidiis 2–4-sporis, hyalinis. Cystidiis haud visis.—Hyphis fibulatis, in tramate hymenophorali elongatis, certis in locis apparenter divergentibus in strato laterali, sed in mediostrato densiore brunneolo subparallelis vel leniter intertextis, in strato laterali minus densis, subgelatinisatis vel agglutinatis; hyphis oleiferis praesentibus.—Epicute peridii paullum differentiata a tramate peridii ubi hyphae appressae, brunneolae, interdum incrustatione hyalina asperulatae, subparallelae sunt.—Hypogaeum in terra sub Nothofago antarctica et in

vecinitate Geneae thaxteri, aestate.—Typus (no. 4400) a cl. Burkart in Cerro Otto, Rio Negro, Argentina Februario 1934 lectus et a J. E. Wright communicatus, in herbario BAFC conservatus est.

AUSTROGASTER MARTHAE Sing., Bol. Soc. Arg. Bot. 10: 57. 1962.
Description see there.

Gymnopaxillus

GYMNOPAXILLUS MORCHELLAEFORMIS Horak in Horak & Moser, Nov. Hedwigia 10: 335. 1966.
Description see there.

Singeromyces

SINGEROMYCES FERRUGINEUS Moser in Horak & Moser, Nov. Hedwigia 10: 331. 1966.
Description see there.

Setchelliogaster

SETCHELLIOGASTER TENUIPES (Setchell) Pouzar, Česká Mycologie 12: 34. 1958.
Description see Madroño 15: 74. 1959. This species is obviously adventitious in South America.

SETCHELLIOGASTER BRUNNEUM (Horak) Sing., Symposium Hesler, 1969, in print.
Description see Horak, Sydowia 17: 299. 1964, as *Hypogaea brunnea* Horak.

SETCHELLIOGASTER TETRASPORUM Sing., Symposium Hesler, 1969, in print.
Description see there.

Thaxterogaster

Thaxterogaster bibulum Sing. spec. nov.—Gastrocarpio obconico margine superiore rotundato, vel obovoideo, 16 × 16 mm cc.—Peridio grisello ("piping rock" M & P), glutinoso, sed siccanate cito, glabro, nudo, levi, in siccis haud nitente et fusco-pallido, tenui.—Gleba brunnea, ochraceo-brunnea, loculis exiguis irregularibus (0.3–1 mm diam.) instructis.—

Stipite exiguo, peridio tecto (quod continuum est) sed glutine haud viso, albo, 1–2 × 1–2 mm cc. Columella stipitem continuante sed in parte inferiore stipite crassiore, apicem versus fortiter attenuata, et in peridium dilatata, alba, percurrente.—Contexto aquose hyalino vel albido, immutabili, in tramate hymenophorali et in peridio interno siccando subbrunnescente, odore fructuum et spriritуoso.

Sporis 15–19.5–(20) × 7–8.5 μ, oblongis vel amygdaliformibus, aequilateralibus vel in latere interiore minus convexis, ornamentatione exosporiali obscure ferrugineo-ochracea verruculosa (0.2–0.3 μ projiciente in parte apicali, minus in parte inferiore), episporio homogeneo, melleo-ochraceo, endosporio subhyalino, intra endosporium in sporis in KOH nonnullis horis praeservatis adultis strato protoplasmatico brunneolo viso, ita ut superficies interna endosporii asperula appareat, haud mucronatis ad apicem nec poro germinativo notabili.—Basidiis 23–32 × 8–12 μ, forma variabilibus, saepe ampullaceis, etiam ventricosis vel subclavatis, interdum ultima cellula subhymenii cum basidio confluente, tenuitunicatis, hyalinis vel partim vel ex integro brunneolis, (2)–4–(5)–6–8-sporis; sterigmatibus conicis, saepe perlongis. Cystidiis nullis, sed pseudoparaphysibus numerosis vesiculosis praesentibus.—Hyphis partim fibulatis, partim defibulatis. Tramate hymenophorali regulari, hyphis filamentosis in mediostrato, saepe inflatis in strato laterali (ibi elementis e.gr. 30–35 × 18–20 μ), ochraceis. Subhymenio cellulari vel subcellulari, ex elementis subisodiametricis sat grandibus efformato.—Epicute peridii ixocutifirmi, hyalina, sat densa sed gelatinisata, (0)–15–39 μ crassa; sub strato gelatinoso peridium pallide ochraceum, paucis incrustationibus melleis ornatum, haud gelatinosum, filamentosum est.—Subhypogaeum in silva Nothofagi pumilionis et Fitzroyae in terra humosa, autumno.—Typus a R. Singer (M 3951) in Argentina: Rio Negro: inter Laguna Frías et Paso de las Nubes, 3/4–V–1964 lectus et in BAFC conservatus est.

THAXTEROGASTER VIOLACEUM Sing., Mycologia 43: 216. 1951.

Description see Brittonia 10: 207. 1958. Cf. also Horak, Nov. Hedwigia 10: 222. 1965 and p. 223 where a var. *citrisporum* Moser in Horak & Moser is described which differs in almost lemon shaped spores 12.5–14 × 7.8–9 μ. We do not know it.

THAXTEROGASTER LUBRICUM Moser in Horak & Moser, Nov. Hedwigia 10: 226. 1965.

Description see there.—It seems to us that *T. gliocyclum*, l.c. p. 221 is only a form or variety of this species which is devoid of violet colors on the peridium.

THAXTEROGASTER DOMBEYI Sing., Persoonia 1: 85. 1960.
Description see there.

THAXTEROGASTER VIOLEIPES Moser in Horak & Moser, Nov. Hedwigia 10: 230. 1965.
Description see there.

THAXEROGASTER TYMPANICUM Horak in Horak & Moser, Nov. Hedwigia 10: 224. 1965.
Description see there.

THAXTEROGASTER NOTHOFAGI Horak in Horak & Moser, Nov. Hedwigia 10: 238. 1965.
Description see there. Also in Chile: Malleco: Cordillera de Nahuelbuta, San Carlos, 16–V–1967, Singer M 6922 (SGO).

THAXTEROGASTER GLUTINOPALLENS Horak in Horak & Moser, Nov. Hedwigia 10: 229. 1965.
Description see there.

THAXTEROGASTER SPHAEROCEPHALUM Horak & Moser, Nov. Hedwigia 10: 232. 1965.
Description see there.

THAXTEROGASTER FRAGILE (Zeller & Dodge apud Dodge & Zeller) Smith apud Sing., Bol. Soc. Arg. Bot. 10: 64. 1962.
Gastrocarp obpiriform much like that of a *Lycoperdon*, about 20–30 mm high and broad, with continuous peridium that does not open to expose the glebam.—Peridium brownish yellow to yellow-ochraceous (e.gr. 10–H–6, M & P), more or less minutely verruculose slightly darker on slightly paler ground, not viscid, smooth, thin (about 0.5 mm when fresh).—Gleba "trotteur tan" M & P, entirely enclosed in the peridium but easily separable from the stipe tissue, finely chambered, not lamellar.—Stipe sterile, solid, contracted from the gastrocarp and little individualized, 7–12 × 8–10 mm, tapering down to an obtusely rounded base, glabrous, whitish.—Columella directly continuing the stipe which on the periphery continues into the peridium, often several columella-like thin often branching plates or solumns extending obliquely into the gleba, all much narrower than the stipe or strongly attenuated upwards, one or several reaching the upper part of the peridium where they are not broadened into the peridium, other branches not percurrent, all white.—Context white, unchanging, fleshy; odor none; taste mild.

Spores 9–12.5 × 7.5–11 μ, mostly 10–12 × 8.5–10.7 μ, young often subangular or angular-nodose and ochraceous, later much like those of the related *T. brevisporum*, and intensely rusty verrucose to verrucose-ridged by the rather heavy exosporial ornamentation on paler ground, the warts often crest-like or plate-like concrescent, 1–1.5 μ high, short-ellipsoid to subglobose, fewer ellipsoid when mature and then not angular, without beak-like mucro at the apex, and without germ pore and without a distinct callus, episporium much paler, no plage.—Basidia forming a continuous hymenium, 26–31 × 6–11.2 μ, 4-spored. Cystidia none.—Hyphae with clamp connections, hymenophoral trama hyaline, regular.—Epicutis of pileus not gelatinized, of 1.5–3.5 μ broad hyphae, somewhat interwoven but basically periclinally running, less interwoven and tangential in inner layer of trama, filamentous here, in places fulvous-brownish from a membrana pigment.

Subhypogeous in the earth or humus of Nothofagus woods (*N. dombeyi*, *N. alpina*), mostly where myrtaceous trees or conifers are mixed in, fruiting in spring, in Tierra del Fuego in summer.

Material studied: CHILE: Magellanes: Punta Arenas, (February and) March 1906, R. Thaxter (NY), part of type.—ARGENTINA: Neuquén: Lago Lácar, Pucará, 6–XI–1966, Singer M 6025 (BAFC).—Villa La Angostura, 8–XI–1966, Singer M 6040 (BAFC).—Quetrihué, 11–XI–1966, Singer M 6059 (BAFC).

Specimens in color more like *T. magellanicum*, with the aspect of a *Cortinarius* since the gleba is eventually free below and slightly lamellarly arranged, but otherwise like *T. fragile* are probably a separate species. For the time being we shall describe them as a variety:

Var. **cortinariopsis** Sing. var. nov.—Gleba demum libera, subtus a peridio haud obtecta; peridio 36–40 mm lato, pileiformi, centro depresso; sporis angustioribus 10–14.5 × 6–7.5 μ, plerumque 11–12 × 6.5 μ, verruculis parvis distinctis exosporialibus asperulatis, ellipsoideis; peridio colore *T. magellanicum* in mentem revocante; stipite magno, subaequali vel ventricoso, glabro, sicco, intus extusque omnino albo vel candido, cavo, columella ramosa haud percurrente, epicute haud gelatinosa, hic hyphis saepe fortiter inflatis notatis, hyalinis. Ad terram humosam in silva Nothofagi dombeyi autumno.—Typus (M 6838) a R. Singer in Chile: Llanquihue: Saltos de Petrohue, 11–V–1967, lectus et in herbario SGO conservatus est (sub nomine *T. fragilis*).

The type analysis published by us (Singer & Smith, Madroño 17: 25. 1963) is somewhat problematic, yet I have no doubt but that the fungus described above is conspecific. It is possible that the pigmentation in younger material is less yellow or brown, but I doubt it, and believe that

the color data on the fungus in the original description are taken from another element, not identical with our fungus. Also, the hollow stipe-columella is most probably an artefact since we have never observed it in well prepared typical material although the var. *cortinariopsis* actually has hollow stipe when fresh.

THAXTEROGASTER SUBALBIDUM A. H. Smith, Madroño 17: 24. 1963.

Description see there.

Thaxterogaster tylostomatoides Sing. spec. nov.—Gastrocarpio globoso vel breviter ellipsoideo, prope stipitem plicato, ad apicem obtuse rotundato vel leniter depresso, a stipite abrupte limitato, 14–16 mm alto, 12–17 mm lato.—Peridio griseo ("Sphinx" M & P), haud viscoso, glabro, tenui in parte superiore gastrocarpii (1 mm), tenuissimo subtus, sed ad stipitem fortiter attingente et glebam numquam liberante nec rupto.—Gleba brunnea ("kis kilim" M & P), parvo-loculata, haud lamellariter disposita.—Stipite griseo ("Sphinx" M & P), aequali vel ad ipsam basin acuminato, solido, glabro, sicco, 10–30 × 2–3 mm. Columella stipitem immediate continuante, recta, albo, percurrente, verticali, simplici, solida, stipite breviore, aequali.—Contexto carnoso, albidulo vel griseo ("Sphinx" M & P); odore nullo.—Sporis 10–14 × 6–8.2 μ, ellipsoideis, subfusoideis, melleo-ochraceis et ornamentatione exosporiali verruculoso-punctatis, vix asperulatis vel leviusculis, sed ad partem distalem asperulatis, ibi saepe truncatis vel subpapillatis, sed poro germinativo destitutis, appendice hilari centrali vel leniter excentrico.—Basidiis tetrasporis, 30–33 × 7–7.5 μ, sterigmatibus haud curvatis. Cystidiis nullis.—Hyphis fibulatis, in tramate hymenophorali regulari tenui-tunicatis vel modice crassiuscule tunicatis, filamentosis, hyalinis, densis et haud gelatinosis.—Epicute peridii ex hyphis tangentialibus repentibus haud gelatinosis filamentosis efformata.—Sub Nothofagis in silva hypogaeum, autumnale et vernale.—Typus (M 3576) a R. Singer lectus et in BAFC conservatus.

Material studied: ARGENTINA: Neuquén: Cerro Cortinario, above Puerto Manzano, in wood of *Nothofagus pumilio*, 26–IV–1964, Singer M 3576 (BAFC), typus.—Rio Negro, 1½ km north of Laguna Frías, under *Nothofagus dombeyi* and *N. antarctica*, with some *N. pumilio*, 19–XI–1964 (spring), Singer M 4043 (BAFC).

This species is remarkable for its *Tylostoma*-like habit. The entire group that forms the type collection was infected by an imperfect fungus which penetrates the carpophores with its hyphae, and forms conidiophores and conidia on the surface which appears pilose.

THAXTEROGASTER VERRUCISPORUM Horak in Horak & Moser, Nov. Hedwigia 10: 226. 1965.
Description see there.

THAXTEROGASTER MUSTELLA Moser in Horak & Moser, Nov. Hedwigia 10: 227. 1965.
Description see there.

THAXTEROGASTER CARNEOROSEUM Horak in Horak & Moser, Nov. Hedwigia 10: 229. 1965.
Description see there.
Material studied: ARGENTINA: Neuquén: Lago Correntoso, 20–IV–1965, Singer M 5085 (BAFC).—The type is from Chile: Magellanes: Puerto Natales.

THAXTEROGASTER BREVISPORUM Sing., Persoonia 1: 386. 1960.
Description see there.

THAXTEROGASTER MAGELLANICUM Sing., Mycologia 41: 219. 1951.
Description see there. Cf. Horak & Moser, Nov. Hedwigia 10: 217. 1965.

THAXTEROGASTER OLORINUM Horak in Horak & Moser, Nov. Hedwigia 10: 218. 1965.
Description see there.

Note: Horak & Moser describe also some other species which may rather be classified as *Cortinarius*. However, one of the species classified by Horak & Moser under *Thaxterogaster* subgenus *Hemicortinarius*, *T. nothofagi*, is a true *Thaxterogaster* and has been inserted among the species enumerated above. Another is somewhat doubtful, and may also be a true *Thaxterogaster*. We describe it below:

THAXTEROGASTER SUBULATUS Horak in Horak & Moser, Nov. Hedwigia 10: 233. 1965.

Gastrocarp (pileus) oval-semiglobate, about 33 mm high and 23 mm broad, the margin tending to be folded and incurved, very slightly lubricous or subviscid to the touch, not glutinous ever, "raw sienna" above, towards margin 13–K–9 mixed with the pallid silky fibrillosity there, otherwise glabrous and smooth.—Gleba (lamellae) irregularly connexed-anastomosing, "raw sienna" (M & P), with paler portions, the plates or lamellae rather thickish, relatively little exposed as it is applicate

to the upper portion of the stipe.—Stipe (-columella) pallid, towards base acuminate, fusiform, hollow, tending to be slightly stramineous from the abundant "Antique gold" (M & P) cortina which may condense into fibrillose scabrosities, about 72 × 10 μ.—Context pallid; odor of apple.

Spores (8)–9–11.5–(12) × (5.5)–6–6.8 μ, rusty, punctate-verruculose from the exosporial ornamentation, ellipsoid to ellipsoid-amygdaliform, or ocoid.—Basidia 22–35 × 8 μ, (2)–4-spored. Cystidia none.—Hyphae (as well as base of basidia) clamped, fewer hyphae (and basidial bases) without clamp; hymenophoral trama hyaline, regular.—Epicutis of pileus (peridium) of thin filamentous brownish-hyaline hyphae, not gelatinized; hypodermium not sharply differentiated from the trama below, ochraceous to rusty brownish, consisting of hyphae forming a cutis, parallel or subparallel, often strongly shortened and some extremely broad (20–34 μ), not gelatinized. On cortina where it appears stained by spores only eight spores recovered, the color being derived from a pigment which is membranal and even slightly incrusting on the hyphae making up the cortina (KOH).

On the ground under *Nothofagus pumilio*.

Material studied: ARGENTINA: Neuquén: Cerro Cortinario above Puerto Manzano, 24–IV–1964. Singer M 3513 (BAFC).

Horak's material came from under *Nothofagus pumilio* and *N. antarctica* in Argentina: Rio Negro: Path from Laguna Frías to the Paso de las Nubes, 1280 m.

Panaeolopsis

Panaeolopsis sanmartiniana Sing. gen. nov. spec. nov.

Panaeolopsis gen. nov.—Genus gastromycetum Montagneae affine, Galeropsidi simillimum, sporis nigris levibus, poro germinativo lato truncato praeditis. Fibulis in hyphis et ad basin basidiorum praesentibus. Typus generis: *Panaeolopsis sanmartiniana* Sing.—**Panaeolopsis sanmartiniana** spec. nov.—Gastrocarpio ovoideo, ellipsoideo, obtuse conico, cylindraceo, magis alto quam lato, forma sua Galeropsides in mentem revocante, subtus truncato-marginato et margine stipitem collariate circomdante sed in adultis numquam attingente, sed per aperturam angustam annuliformem glebam exponente.—Gleba lamelliformi, lamellis haud anastomosantibus, ascendentibus, nigris, interdum brunneo-fuligineis, satis angustis, ad acies albis, confertis vel subconfertis, adnexis vel late adnatis.—Stipite a columella haud limitato, albido, ad basin paullum brunnescente, subvelutino impolito, anguste cavo, aequali vel in parte columellari leniter dilatato, (columella inclusa) 24–81 × 0.8–2.5 mm;

velo nullo, volva nulla.—Peridio alutaceo ("honeysweet", M & P), ad marginem inferiorem albido et ibi interdum subplicato vel plicato-sulcato, ceterum levi, glabro, haud viscoso, haud hygrophano vel vix hygrophano, intus albido, margine inferiore acuto, tenui saepe substerili et cinguliformi (ad latus interius venis tantum hymenophoralibus lamellas continuantibus ornato vel sublevi), submembranaceo, recurvato stipitem versus.—Contexto albo vel albido, immutabili, inodoro, miti.—Sporis juvenilibus hyalinis, maturando fuscis dein nigricante-sepiaceis, nonnullis pigmento atro solido intus granulatis, plerumque pigmento membranali tantum gaudentibus quod in solutione H_2SO_4 concentrati vix pallescit, in adultis 1–18.5–(20) × (6.5)–7.5–11–(15.5) μ, ellipticis, rarius subrhombicis vel subglobosis frontaliter visis, lateraliter nonnihil angustioribus 5–9 μ diametri, sed nonnullis haud lentiformibus, poro germinativo constante lato truncato praesente, membrana crassa triplici, levi, appendice hilari centraliter vel excentrice annexo.—Hymenio e basidiis et interdum perpaucis pseudoparaphysibus hyalinis 31.5 × 12.5 μ efformato et cheilocystidiis in parte inferiore lamellarum tantum marginato. Basidiis 18.5–28 × 9–11.5 μ, (1)–2–4-sporis, plerumque tetrasporis, hyalinis, paucis brunneolis, clavatis, ad basin fibulatis; sterigmatibus ad basin suam latis, rectis vel curvatis centrum versus, rarius centrifugaliter, 1.7–2.5 μ latis ad basin. Cheilocystidiis in parte superiore lamellarum sparsis vel subnullis, in parte inferiore lamellarum numerosis, (7)–24–45–(48) × 6–14.5 μ, plerumque 25–40 × 7.5–9.5 μ, ampullaceis, multis pedicellatis, apice interdum semel bisve constrictis, frequentius subcylindraceis et obtusis, 5–25 × 3–7 μ. Pleurocystidiis nullis; pseudocystidiis nullis.—Hyphis fibuligeris, in tramate hymenophorali regulari nec non in tramate interiore peridii et in stipite hyalinis, tenui-tunicatis, inamyloideis, haud gelatinosis, elongatis.—Epicute peridii hymeniformi vel epitheliiformi (i.e. unistratosa vel bistratosa, cellular matere cellulae terminalis aut hyphali aut inflata), ex elementis terminalibus hyalinis, levibus, vesiculosis et paucis dermatocystidiis efformata; cellulis terminalibus subisodiametricis vel isodiametricis, 10–40 × 8–25 μ, plerumque 18–23 × 15.5–16.5 μ; dermatocystidiis cheilocystidiis simillimis; hypodermio peridii cutiformi, in parte marginali gastrocarpii hyalino, in parte superiore melleo-brunneolo, ibi hyphis pigmento incrustatis, haud gelatinosis. Ad apicem stipitis dermatocystidiis ventricosis et leniter constrictis in parte media vel superiore, hyalinis, obtusis, 22.5–33 × 5–8.5 μ.—Inter herbas et ad fimum locis apricis, humidis, aestate.—Typus a A. Ruiz Leal (no. 6591) lectus et in suo herbario in Mendoza nec non (holotypus) in herbario BAFC conservatus est.

Material studied: ARGENTINA: Mendoza: Las Heras: Parque General San Martín, 14–II–1939. A. Ruiz Leal 6591 (Herbario Ruiz Leal,

Mendoza, syntype; BAFC, holotype).—Buenos Aires: road from San Antonio de Areco to Carmen de Areco, 12–XII–1965, Singer S 585 (BAFC).

This species is in shape very much like *Galeropsis* but has black spores and a better developed hymeniform epicutis. There are some spores deposited at the apex of the stipe and in the interlamellar spaces, but these are very scarce and few, and were apparently deposited by ants which seem to be active in the dissemination of the spores. There does not seem to be any spore projection inasmuch as it would be rather inefficient given the small ring-like outlet from the gleba to the outside below the margin of the peridium. The basidia-sterigma-spore-arrangement is variable and not always agaricoid. If this were an agaric, it would enter the genus *Panaeolus* hence the generic name proposed. There can be no doubt but that *Panaeolus* and *Panaeolopsis* are related. We believe that *Panaeolus* must be derived from *Panaeolopsis*.

There is another, Brazilian species of this genus. The Argentine species is somewhat marginal in relation to the Patagonian flora, but since the fungus is rare, and the southern limits of its occurrence unknown, we include it here.

Montagnea

MONTAGNEA ARENARIA (D. C.) Zeller, Mycologia 35: 418. 1943 (as *M. arenarius*.).

Description see Mycopath. & Mycol. Appl. 34: 139. 1968.

Montagnea argentina (Speg.) Sing. comb. nov.

Montagnites argentina, Speg., An. Mus. Nac. Bs. As. 6: 160. 1899.

There are undoubtedly at least two species of *Montagnea* in Southern South America.

The one described by us is characterized by the broad lamellar tramal plates that become recurved so that the old gastrocarp has no coprinoid appearance. This is typical *M. arenaria*. On the other hand, the type of *M. argentina* has narrow lamellar glebal plates which never become recurved but maintain a pileus-like gastrocarpium. The spores are slightly larger (reaching 18.5 × 12 μ) in *M. argentina*, but, European material we have checked and which is identified as *M. arenaria* or *candollei* has at times spores reaching 22 × 12.5 μ so that this character is, perhaps, not decisive.

In the Patagonian material cited below, there is always an additional characteristic visible in the older carpophores: The margin of the "pileus"

becomes reticulate and perforated. This has never been seen in the specimens from Northern Argentina where, in addition, the spores were found to be slightly smaller: 12.5–15 × 6.5–7.5 μ. This is the type form to which Spegazzini's description refers, l.c. The Southern (Patagonian) form, then, appears to be a geographical race of the colder habitats.

In this southern race—which we at the moment prefer to leave unnamed—but which is the one that concerns us in the present flora, we find the germ pore of the spores is frequently oblique and eccentric, the hilar appendage central or eccentric, the basidia (1–2–3)–4-spored, with conical sterigmata. Clamp connections are absent. The spores vary considerably in shape, from short ellipsoid to oblong, and some are distinctly reniform in lateral view. Some of the spores turn light livid in concentrated H_2SO_4, as do those of *Coprinus*, others remain nearly black although they become slightly transparent; but after prolonged action of the acid, all become more or less pallescent.

All our collections and apparently also those by other authors, come from sandy open xerophytic localities but not from the sea shore. Carpophores can be found from November until February, more rarely until April.

Material studied: (1) northern race: ARGENTINA: Salta: La Viña, January 1897, Spegazzini (LPS, no. 16 245), typus.—Cachi, January and February 1897, Spegazzini (LPS).—Catamarca: Huillapima, 15–XII–1909, Spegazzini (LPS, no. 16 268).—April 1909, (LPS, no. 16 269).—Also various collections at LIL from the same general region.—(2) southern race: ARGENTINA: Buenos Aires: Carmen de Patagones, Tres Cerros, February 1898, Spegazzini (LPS, no. 16 270).—Lago Musters, February 1899, Spegazzini (LPS, no. 10 271).—Neuquén: San Ignacio: 4–XI–1966, Singer M 6005 a (BAFC).—Parque Nacional Laguna Blanca, 3–XI–1966, Singer M 6001 (BAFC).

Polyplocium

Polyplocium patagonicum Sing. spec. nov.—Gastrocarpio pileiformi, convexo, sterili in latere superiore, tecto hymenophoro in parte inferiore, plerumque circum umbonem applanato, 30–35 mm lato.—Peridio albo, glabro, levi, neque hygrophano nec viscoso, in parte superiore sat crasciusculo et in vegetis carnoso, haud gelatinoso.—Gleba lamelliformi, sed in siccis lamellis transversaliter ruptis ita ut hymenophorum siccorum irpiciformiter evadat sed numquam Montagneae modo recurvatum est; lamellis in vegetis nigris, latis, ventricosis, confertissimis, liberis, in siccis

pulverulentis.—Stipite a columella haud differentiato, longo, albo, apice tenuiore vel aequali, solido, 80–95 × 5–9.5 mm; velo nullo sed volva alba, membranacea, sat tenui, basali, in vegetis haud cupuliformi sed cothurnata, in siccis magis cupuliformi, stipitem usque ad apicem fragmentis suis squamiformiter obtegente, squamis haud vel vix confluentibus, moderatim densis, albis.—Contexto in parte centrali gastrocarpii sat carnoso in vegetis, albo, immutabili, in stipite carnoso, albo, immutabili, in hymenophoro ceraceo-carnoso sed tenuissimo; odore nullo.—Sporis 10–13–(15) × 6–8 μ, ellipsoideis, levibus, fuligineis, membrana complexa 1.5–2 μ crassa instructis, poro germinativo truncato lato praeditis.—Basidiis 22–36 × 8.5–12 μ, hyalinis vel pallide brunneolis, vesiculoso-clavatis, pedicellatis, 1–2–3–4-sporis; sterigmatibus rectis, sed sporis symmetrice vel axialiter asymmetrice affixis, haud ejectis. Cystidiis nullis.—Hyphis defibulatis, in tramate hymenophorali haud gelatinosis, hyalinis, elongatis.—Epicute peridii vix differentiata, ex elementis versiformibus, in omnibus directionibus currentibus, haud gelatinosis, levibus efformata.—Ad terram nudam in apricis subdeserticis gregatim, epigaeum. Fructificatio vernalis.—Typus (M 6005) a R. Singer in Patagonia lectus et in herbario BAFC depositus.

Material studied: ARGENTINA: Neuquén: San Ignacio, 4–XI–1966, Singer M 6005 (BAFC), typus.

I do not share the opinion that *Polyplocium* is a synonym of *Montagnea*. These genera are strongly related but differ in the volval development, in the stipe which is not solid but stuffed then hollow in the species of *Montagnea*, the lamellar tramal plates of *Polyplocium* which are neither narrow nor recurved whereas in *Montagnea* they are either very narrow or recurved over the peridium, in the peridium development which is different insofar as in *Montagnea* it is obliterated all over the gastrocarp excepting mostly the very disc region while in *Polyplocium* only a narrow marginal region shows obliteration of the peridium; furthermore the context is fleshier in *Polyplocium*. The spores are larger in those Montagneas we have studied, but it is true that small-spored species of *Montagnea* have been described. The Montagneas known to this author are strictly arenicolous. *Polyplocium patagonicum* grows in deep earth accumulated by the winds.

The confusion of *Polyplocium* and *Montagnea* is probably due to the fact that North American material of *Montagnea arenaria* has once or twice been determined—erroneously—as *Polyplocium californicum*. Zeller and Pilát consider the type of this species as a species of *Gyrophragnium*. There can be no doubt about the generic non-identy of *Gypophragmium* and *Montagnea* (cf. Zeller, Mycologia 35: 409–421. 1943).

Weraroa

WERAROA SPADICEA Sing., Persoonia 1: 389. 1960.
Description see there.

WERAROA PATAGONICA Sing. & J. E. Wright, Darwiniana 11: 607. 1959.
Description see there.

Hymenogaster

Hymenogaster pulcher Sing. spec. nov.—Gastrocarpio piriformi, obovato, pulvinato, 7–16 mm alto, 9–11 mm lato.—Peridio haud gelatinoso, extus violaceo ita ut in Thaxterogastro violaceo, intus albo et immutabili in vegetis et tunc ± 1 mm crasso, brunnescente in siccis in strato exteriore, 0.20–0.25 mm in siccis crasso, superficie in siccis coriicolori-cinnamomeo, haud viscoso, glabro vel subglabro sed cordonibus mycelialibus bene evolutis e basi natis laxe tecto.—Gleba castanea, in vegetis carnosa, in siccis leniter subpulveracea, loculis exiguis numerosis excavata.—Stipite nullo; columella vera nulla, sed interdum laminibus hymenophori subincrassatis, divergentibus nec percurrentibus.—Odore nullo notabili.—Sporis (10)–11–16.5 × 4.5–5 μ, oblongo-fusiformibus, oblongo-ellipsoideis, levibus, membrana 1 μ crassa, ex episporio 0.5 μ crasso, endosporio 0.5 μ crasso efformata et perisporio subnullis instructis, appendice sterigmatali centrali 1–3.5 μ longo in polo inferiore et/aut appendiculo globuloso (usque ad 2 μ diam.) in polo distali praevisis, appendicibus illis hyalinis, membrana ceterum brunneola, poro germinativo nullo.—Basidiis haud visis sed probabiliter inter 3 et 5 sterigmata ferentibus. Cystidiis haud visis.—Hyphis fibuligeris in tramate hymenophorali regulari hyalinis.—Strato externo peridii haud gelatinoso, brunneo, incrustationibus pigmenti autem destituto (KOH), denso, tangentialiter intertexto, hyphis elongatis, irregularibus, intus brunneolis. Strato interno peridii ex hyphis variabilibus forma et diametro suo, subhyalinis, in omnibus directionibus currentibus, 2–19 μ latis efformato.—In silvis nothofagineis (*N. dombeyi*) autumno, hypogaeum.—Typus (M 5083) a R. Singer in Argentina lectus et in BAFC conservatus est.

Material studied: ARGENTINA: Neuquén: Lago Correntoso, 20–IV–1965, Singer M 5083 (BAFC), typus.

Other species of this genus have been indicated from our region, such as *H. ruber* Harkness (which would differ from the above species in verrucose spores, and white peridium becoming pale red and turning purple when touched), reported by Dodge & Zeller as having been collected at

Punta Arenas by Thaxter (FH), and *H. fragile* which see under *Thaxterogaster*. Furthermore, *H. albellum* Mass. & Rodway from Tasmania (here included, by Dodge & Zeller, a collection by Thaxter from Punta Arenas); this species is white, turning yellowish to light buff.

Since I have not studied these specimens, it remains doubtful as to whether they are correctly determined and whether they actually belong in *Hymenogaster*.

Galeropsis

GALEROPSIS ALLOSPORA Sing., Lilloa 23: 239. 1951.

Description see Spegazzini An. Mus. Nac. Buenos Aires 24: 180. 1913 and Singer, l.c. Cf. also Proc. K. Nederl. Akad. Wetensch. Amsterdam C 66: 106–112. 1963.

GALEROPSIS ANDINA Sing., Proc. K. Nederl. Akad. Wetensch. Amsterdam C 66: 107. 1963.

HYSTERANGIINEAE

Hysterangium

HYSTERANGIUM SEPARABILE Zeller, Mycologia 33: 203. 1941.

Description see there.

Material studied: ARGENTINA: Rio Negro: Laguna Frías, 2–V–1964, Singer M 3850 (BAFC).—Neuquén: Puerto Manzano, 22–IV–1964, Singer M 3426 (BAFC).—Lago Correntoso, 20–IV–1965, Singer M 5081 (BAFC).

H. carneoroseum Horak is probably the same species.

Some other species have been indicated from our region which are unknown to this author: *H. violaceum* Horak, with violet colored peridium; *H. cystophilum* (Tul.) Zeller. & Dodge; *H. purpureum* Zeller & Dodge.

PHALLINEAE

Clathrus

CLATHRUS GRACILIS (Berk). Schlecht.

This has been indicated for Juan Fernandez and South Chile. We have

annotated it from fresh material, collected in CHILE: Maule: between Chovellén and Trehualemu, 700–800 m alt., 3–VIII–1967, Singer M 7200 (SGO); seen also in ARGENTINA: Neuquén: Los Cántaros.

It is easily recognized as it is the only clathraceous fungus native to our region.

Appendix 2.

APHYLLOPHORALES

THELEPHORACEAE

Thelephora

THELEPHORA TERRESTRIS Ehr. ex Fr., Syst. Mycol. 1: 431. 1821.

Widely distributed and common species. In our region less common, and apparently forming ectotrophic mycorrhiza with *Nothofagus antarctica;* also with planted trees like *Cedrus,* etc.

BANKERACEAE

Phellodon

PHELLODON MELALEUCUS (Fr.) Karst., Rev. Mycol. 31: 18. 1881.

Description see in modern European literature, e.gr. Donk, Med. Bot. Mus. Herb. R. Univ. Utrecht 9: 49–51. 1933. I am grateful to Dr. Maas Geesteranus for the determination of our material which comes from CHILE: Llanquihue: Ensenada, under *Nothofagus dombeyi,* 11–V–1967, Singer M 6839 (SGO).

AURISCALPIACEAE

Lentinellus

Lentinellus omphalomorphus (Bertero & Mont.) Sing. comb. nov.

Agaricus omphalomorphus, Bertero & Mont., Ann. Sc. Nat. Bot. II. 8: 367. 1835.

Lentinus furfurosus Fr., Epicr. p. 391. 1838.

Pileus tawny to brownish ochraceous with often paler (cinnamon or pinkish cinnamon) margin (e.gr. "suntan", "Tuscan tan", 13–C–10, "gol-

den wheat" M & P), young finely pruinose, soon glabrescent, costate-furrowed only in age and on margin or from the first and all over, often so coarsely so that in the central portion the surface appears spinose-rugose, otherwise smooth or subsmooth, not viscid, with eventially often lobed margin, convex, sometimes with slightly subumbonate center but even then inside tle elevated zone umbilicate to depressed, finally partly applanate or concave, but usually remaining convex over the marginal region, 7–35 mm broad.—Lamellae pale avellaneous ("sweetmeat", "tansan", "cork"), often more pallid towards the edges, narrow to broad, usually medium broad (e.gr. 3.5 mm broad at 35 mm diameter), strongly and mostly suddenly narrowed at the margin subdistant to crowded, some forked, edge at first entire, later slightly crenulate, at first adnexed, later adnate to subdecurrent, sometimes ventricose.—Stipe brown ("auburn" or 14–F–10) or umber-bister to dull deep fuscous below and fusciduluous-pallid above, finely pubescent-pruinose (under a lens densely pilose) but glabrescent, irregularly cylindrical but often not quite terete, mostly with one or two longitudinally running, sometimes interrupted, furrows canaliculate, attenuated upwards or downwards, or subequal to equal, often acuminate or simply rounded at base, but also often with rhizoid short pseudorrhiza-like extensions in the part that is immersed in the substratum, sometimes these rhizoid-like extensions long, numerous and ramified, centrally to eccentrically attached, but also often laterally attached to the margin of the pileus where the latter is sinuate, vertical and straight or only slightly oblique, 18–55 × 1.5–4 mm.—Context subconcolorous with the surfaces but paler, dried sometimes whitish, toughish; odor none, or almost nil; taste usually mild, or only very slightly subacrid.

Spores 4.7–5.5 × 3.7–4 μ, short ellipsoid, very finely punctulate by and amyloid exosporial ornamentation, appearing almost smooth in KOH, where they are subhyaline, or hyaline.—Basidia 20–22.5 × 3.8–5 μ, 4-spored. Cystidia none, or scattered and cystidiol-like basidiomorphous. Macrocystidia none.—Hyphae with clamp connections, in the hymenophoral trama regularly arranged, but the majority strongly interwoven, hyaline, thin-walled or almost so, in the trama of the pileus some amyloid, some inamyloid, the amyloid ones pinkish-purplish in the Melzer, both kinds often with light brownish pigment incrustations, interwoven, about 5 μ thick. (The nature of the pubescence of the young carpophores has not been ascertained.)

On and around *Nothofagus*-wood and on woody humus in woods (*Nothofagus antarctica, N. pumilio, N. dombeyi*), if so, connected with buried wood.

Material studied: ARGENTINA: Neuquén: Cerro Cortinario above

Puerto Manzano, 11–IV–1963, Singer M 3376 (BAFC).—15–III–1963, Singer M 3059 (BAFC).—11–IV–1963, Singer M 3375 (BAFC).—Quetrihué, 20–V–1952, Singer M 779 (LIL).—Lago Correntoso, 16–IV–1965, Singer M 5010 (BAFC).

Lentinellus calyciformis Sing. spec. nov.—Pileo subcinnamomeo ("suntan" M & P), glabro, levi, margine acuto, caliciformi-umbilicato, mox concavo, 7 mm cc. lato.—Lamellis pileo concoloribus vel pallidoribus, angustis, plerumque veniformibus, distantibus vel subdistantibus, subobtusis, profunde decurrentibus.—Stipite pileo concolori, centrali, glabro, levi, aequali vel basin versus leniter attenuato, 10 × 2 mm cc.—Contexto pileo pallidiore, inodore.—Sporis dimorphis (a) 3.5–5 × 3.2–4 μ, breviter ellipsoideis, levibus, debiliter vel fortiter amyloideis, (b) 5.2–5.5 × 4.2–4.7 μ, breviter ellipsoideis vel ellipsoideo-ovoideis, manifeste verrucis ornamentationis exosporialis amyloideae (amylaceae) ornatis, omnibus in ammoniaco hyalinis et membrana moderatim tenui instructis, appendice hilari exiguo acuto praeditis.—Basidiis 12.3–14.5 × 5.5–5.8 μ, clavatis vel vesiculoso-clavatis, hyalinis, tetrasporis. Cystidiis (pseudocystidiis?) 18–35–(74) × 3.2–4.5–(8.2) μ, elongate fusiformibus, fusoideo-irregularibus et appendicibus apicalibus et lateralibus laceratis, obtusis vel acutis, interdum projicientibus, generatim contentu subnullo vel sparso (sed cf. endocystidia), saepe guttulis exiguis repletis, tenui-tunicatis, inamyloideis, aliis ventricoso-clavatis et pseudoparaphyses simulantibus, simplicibus et levibus, e.gr. 22.5 × 10 μ. Hyphis fibulatis, cum elementis vascularibus (oleiferis) intermixtis, in tramate hymenophorali regulari subintertextis, haud gelatinosis, hyalinis vel certis in locis pallide fuscidulis, tenui-tunicatis, filamentosis, omnibus inamyloideis. Hyphis oleiferis numerosissimis, contentu verniformi vel granulari repletis, filamentosis, 2.5–6 μ latis, interdum ad apicem clavatis, interdum in membro terminali cystidiformibus, his endocystidiis 71–74 × 6.5–8.2 μ, hyalinis, contentu verniformi vel granulari repletis vel destitutis, elongate fusiformibus, inamyloideis, obtusis vel acutis, tenui-tunicatis.—Ad truncum vivum muscosum Nothofagi dombeyi in silva solitario.—Typus a R. Singer (M 3187) in Argentina lectus et in BAFC conservatus.

Material studied: ARGENTINA: Rio Negro: path from Laguna Frías to Paso de las Nubes, 24–III–1963, Singer M 3187 (BAFC), typus.

HERICIACEAE

HERICIUM CORALLOIDES (Scop. ex Fr.) S. F. Gray, Nat. Arr. Brit. Pl. 1: 652. 1821.

Description see Persoonia: 1: 119. 1959, by Maas Geesteranus.

FAVOLASCHIACEAE

Favolaschiaceae stat. nov.—= Favolaschieae Murr., Torreya 3: 7. 1903. A Corticiaceis differt hymenio catahymeniformi vel euhymeniformi, gloeocystidiis frequenter praesentibus, acanthophysibus frequenter praesentibus, hyphis frequenter gelatinisatis, inamyloideis, sporis amyloideis, levibus vel spinulosis, in cumulo albis vel aurantiacis, interdum roseo-salmoneis. Fibulis plerumque praesentibus, carpophoris plus minusve cupuliformibus, pendulis, hymenophoro levi vel poriformi vel alveolato. Typus familiae: *Favolaschia* (Pat.) Pat. apud Pat. & Lagerh.

Gloeosoma

GLOEOSOMA VITELLINUM (Lév.) Bres., Ann. Mycol. 18: 51. 1920.
Very common all over the area. Spore print salmon-orange.

Favolaschia

FAVOLASCHIA ANTARCTICA (Speg.) Sing. Sydowia 9: 368. 1955.
Microscopical description and notes see l.c.

Favolaschia aulaxina (Mont.) Sing. comb. nov.
Agaricus aulaxinus Mont. in Gay, Hist. Chile 7: 337. 1850.
Description see there.

Favolaschia papulata (Mont.) Sing. comb. nov.
Laschia papulata Mont. in Gay, Hist. Chile 7: 367. 1850.
Description see there. Cf. Lloydia 8: 213. 1945.

FISTULINACEAE

Fistulina

FISTULINA ANTARCTICA Speg., Bol. Acad. Cienc. Cordoba 11: 8. 1887.
This is by no means a variety of *Fistulina hepatica* Fr. as has been pointed out correctly by Spegazzini, Result. Prim. Exped. Tierra d. Fuego

p. 15, 1922. The bright purple pink color of the young fresh carpophores makes it perfectly clear for anybody who has seen both *F. hepatica* and *F. antarctica* in the field, that these two species are constantly different. It is very common in all our regions.

FISTULINA ENDOXANTHA Speg., Bull. Acad. Nac. Cienc. Cordoba 25: 23. 1921.

Description see there. This is obviously specifically different from the preceding species as well as from *F. hepatica.* We have carefully compared materials of this species collected in the Cordillera Pelada, Valdivia, Chile, with both specimens of *F. antarctica* and *F. hepatica.* In fresh condition they are distinguishable at first sight. On *Nothofagus-alpina*-wood, Singer M 6778 (SGO). The pileus has "Mandalay" (M & P) colored fibrils on "primulin y" ground and flesh. Odor fruity.

Note: There is obviously a third species of *Fistulina* which never has either yellow or purplish pink colors but is spadiceous, the pallid pores changing to brown when touched. We have this species from Argentina, Neuquén, Los Cántaros where we observe it since 1952.

SCUTIGERACEAE

SCUTIGERACEAE Bondarzew & Sing., Ann. Mycol. 39: 48. 1941 ex Sing., fam. nov.

Polypori stipitati uni- vel multipileati, carnosi vel carnoso-tenaces; sporis hyalinis membrana homogenea vel heterogenea sed levi inamyloidea instructis, subglobosis vel subelongatis sed raro oblongis vel cylindraceis vel fusoideis; fibulis praesentibus vel absentibus; hyphis generatim hyalinis, inamyloideis; setis et metuloidibus nullis, gloeocystidiis nullis; structura asterostromelloidea absente. Ectotrophice myrcorrhicici vel parasitici vel saprophytice ad lignum crescunt, sed frequentius terricolae. Typus familiae: *Scutiger* Paulet ex Murr.

Grifola

Grifola gargal Sing. spec. nov.— Multipileata, grandis, carnosa, edulis. Pileolis brunneolis, sordidis, vel subolivaceo-brunneolis. Poris albis sub-lacerato-irpicioideis. Contexto albo, sapore admodum leniter adstringente in vegetis, submiti; odore subnullo.—Sporis 7–7.5 × 5.2–5.5 μ, ellipsoideis, apparenter levibus, sed membrana subtenui heterogenea instructis, spinulis perbrevibus immersis, punctatulis, hyalinis, inamyloideis.—Basidiis 24–36

× 7–7.5 μ, clavatis, tetrasporis. Cystidiis nullis, sed nonnullos hyphis hymenium percurrentibus.—Hyphis in tramate intertextis, membrana tenui vel moderatim tenui hyalina inamyloidea instructis, haud gelatinosis, fibulatis.—Ad truncos nothofagineos, autumnalis.—Typus a R. Singer lectus (M 6934) et in SGO depositus.—Ceterum ut in *G. sordulenta.*

Material studied: CHILE: Valdivia: 15 km northeast of Mirador, Cordillera Pelada, 6–V–1967, Singer M 6934, typus, with agfachrome.

This species is known locally as "gargal". It differs from the European *G. frondosa*, Rindly sent to me by Dr. A. M. Donk, in the more strongly heterogenous spore wall and other characteristics.

GRIFOLA SORDULENTA (Mont.) Sing., Agaricales mod. tax. p. 300. 1962.

Multipileate, pileoli radially coarsely fibrillose-venose-rugose-scabrous, in some with some Hydnum-like spinules, where not exposed to the light or little exposed remaining white, otherwise tending to become pale cinnamon, tending to gray on margin and on drying, flabelliform, imbricate, 20–85 mm broad.—Hymenophore irpicioid, white, decurrent, foming wide angular lacerate (as in some *Lentinellus*) pores which become more and more lamellar with serrulate edges, as they approach the margin of the pileoli, 5 mm in diameter (pore length), but lamellae anastomosing. —Stipes rising from a large common trunk-like base where secondary stipes branch off, ending in centrally or eccentrically stipitate pileoli, but some pileoli subsessile directly on the common base where they emerge laterally, white or whitish.—Context white, unchanging, tough-fleshy; taste bitter and at the same time acrid; odor strong, of anise.—Entire carpophore about 300–350 mm broad and high.

Spores 5.5–7.3 × 4–4.8 μ, varying from subglobose to short ellipsoid or ellipsoid, never oblong or cylindric, hyaline in KOH and appearing smooth in this medium, however appearing punctate when focussed on the upper surface, because of an ornamentation of the type XI, which makes the spore wall which is rather thin as if inserted by hyaline very short spinules, inamyloid (both pseudoamyloid and amyloid or amylaceous wall material absent), axially asymmetrical.—Basidia 23–24.7 × 6.5–7.2 μ, hyaline, 4-spored. Cystidia none, but free edges of the hymenophore with free hyphal ends 3.3 μ broad, smooth and non-gelatinous. In the hymenium, there are extremely rare pseudophyses, some slightly branched (dendrophyses), hyaline, e.gr. 32 × 3.5 μ.—Hyphae with clamp connections, most of them of the medallion type, hyaline in the trama, inamyloid, in the hymenophoral trama regularly arranged, all elongated (no spherocysts), not gelatinized.

On dead trunk of *Nothofagus dombeyi*, in the forest, fruiting in summer.

Material studied: ARGENTINA: Neuquén: Quetrihué, 7–III–1959, Singer M 1689 (LIL).

GRIFOLA FRONDOSA (Dicks. ex Fr.) S. F. Gray, Nat. Arr. Brit. Pl. 1: 643. 1821.

Description see Pilát, Atl. Champ. Eur. 3: 32. 1936.

Material studied: ARGENTINA: Neuquén: La Angostura, 18–IV–1965, Singer M 5032 (BAFC).

GOMPHACEAE

Gomphus

GOMPHUS NOTHOFAGORUM Sing., Biologica, Univ. Chile 41: 69. 1968.

Description see there.

Ramaria (= Clavariella)

RAMARIA PATAGONICA (Speg.) Corner, Darwiniana 2: 203. 1957.

Basal trunk cylindric, white, with abundant white basal mycelium, ramified above; branches brass color ("brass" to "lime y" M & P), with deeper yellow apices which are finely acute; entire fructifications 30–40 mm high; context and surfaces when touched or bruised unchanging; taste mild; odor not characteristic.

Spores 7.7–9 × 3.3–5 μ, including the ornamentation, the latter spinulose and very acutely projecting 0.6–1.2 μ, wall ochraceous, outline comma-shaped.—Basidia 25 and more μ long, ± 6.5 μ broad, 4-spored; long stretches of the "fertile" surface are often covered merely by hyaline hyphal ends which apparently are not basidioles, in these areas "hymenial" surface velutinous.—Hyphae hyaline, thin-walled, somewhat interwoven, regularly arranged in the smaller branches, with clamp connections.

Under *Nothofagus* and *Austrocedrus* on earth and fallen leaves and woody chips.

Material studied: ARGENTINA: Neuquén: Puerto Manzano, at 900 m alt., 8–IV–1963, Singer M 3318 (BAFC).—M 3325 (BAFC).—Tierra del Fuego: Gregory Bay, April 1882, (LPS), typus.

RAMARIA STRICTA (Fr.) Quél., Fl. Mycol. p. 464. 1888.

Description see Corner, Clavaria and allied gen. p. 623. 1950.

Ramaria inedulis Sing. spec. nov.—Carpophoris violaceo-lilaceis, forma sua R. flavam in mentem revocante ita ut magnitudine et contextus consistentia, alba basi interdum leniter purpurea-fibrillosa; apicibus obtusis, haud gelatinosis; contexto albo, carnoso, interdum violaceo-pallido marmorato, immutabili; sapore miti sed nonnihil terpentinoso; odore nullo.—Sporis in cumulo alutaceis.—Sporis s.m. 11–13–(13.5) × (3.8)–4.5–5.5 μ, longioribus etiam angustioribus, fusoideis, flavidis, verrucis catenulatis vel cristulis longitudinalibus interdum anastomosantibus vel obliquis asperulatis, inamyloideis.—Basidiis 30–34 × 5.5–6.5 μ, clavatis, tetrasporis. Cystidiis nullis.—Hyphis fibulatis, longitudinalibus in ramulis, subregulariter dispositis, haud gelatinosis, tenui-tunicatis, 2–13 μ latis.—Ad terram in silvis nothofagineis.—Typus (M 3106) a R. Singer lectus, in herbario BAFC conservatus est.

Material studied: ARGENTINA: Rio Negro: Laguna Frías, 21–III–1963, Singer M 3106 (BAFC), typus.—Neuquén: Quetrihué: 7–III–1959, Singer M 1694 (BAFC).

This is close to *R. holorubella* and specimens were determined so by Corner. However, the color is somewhat different, the context is unchanging.

This is one of the inedible species of this genus.

RAMARIA FLAVA (Fr.) Quél., Fl. Mycol. p. 466. 1888.

Var. SUBTILIS (Coker) Corner, Trans. Brit. Myc. Soc. 49: 108. 1966.

Description see there. This is one of our most common species. It is often eaten in Chile and comes to the markets under the name of "changle" (which it has in common with other edible species of *Ramaria*).

Material studied: CHILE: Llanquihue: Peulla, 20–III–1959, Singer M 1915 (BAFC).—Valdivia: 5 km north of Colaco, 14–V–1967, Singer M 6882 (SGO).—Maule: Pilén, leg. E. Sierra, det. Singer, comm. Singer M 7044 (SGO).—ARGENTINA: Neuquén: Los Cántaros, 14–III–1959, Singer M 1780 (BAFC), det. Corner.—M 1804, det. Singer.

Var. *PARVISPORA* Corner, Trans. Brit. Myc. Soc. 49: 107. 1966.

Description see there.

Material studied: CHILE: Valdivia: Cuesta Santa Elvira, 15–V–1967, Singer M 6915 (SGO).

RAMARIA SUBAURANTIACA Corner, Bull. Br. Mus. Nat. Hist. 1: 200. 1955.

Var. **aurantiaca** (Corner) Sing. comb. nov.

Ramaria aurantiaca Corner, Darwiniana 11: 200. 1957.

Description see Corner l.c.

RAMARIA HOLORUBELLA (Atk.) Corner, Clavaria and allied gen. p. 596. 1950.

Description see there.

The Southern South American form agrees well with the description given by Corner. Its taste is mild. The context when bruised changes to 56–L–1 (M & P) and the branches are 9–B–4 with wine reddish apices. The hyphae have clamp connections.

RAMARIA FLAVOBRUNNESCENS (Atk.) Corner, Clavaria and allied gen. p. 581. 1950.

Description see there.

Material studied: CHILE: Llanquihue: Volcán Osorno, 2 km from Petrohué, 10–V–1967, Singer M 6837 (SGO).—Maule: between Chovellén and Trehualemu, 3–VIII–1967, Singer M 7202 (SGO).—M 7203 (SGO).

Ramaria valdiviana Sing. spec. nov.—Trunco subtenui, nonnullis ramulis e basi nascentibus, plurimis ad mediam longitudinem (100 mm. cc.) sed vix densis, ramis, ramulis (apicibus exceptis) et trunco ochraceis, nonnullis ramis et ramulis demum cavis, trunco et nonnullis ramis semper solidis, apicibus exiguis, plerumque acutiusculis vel subacutis, sed in ramulis basis saepe brevissimis et obtusis, vitellinis, plerumque coronatim condensatis sed neque globuloso-inflatis nec gelatinosis; contexto albido, immutabili; sapore miti. Odore subnullo.—Sporis 9.5–11 × 4.5–5 μ, plerumque levibus, nonnullis leniter asperulatis, flavidis.—Basidiis 48 × 8.5–10 μ, tetrasporis.—Cystidiis nullis, sed in apicibus cellulis terminalibus nonnullis cystidiformibus, elongatis, tenuibus praesentibus.—Hyphis monomiticis, fibulatis, intertextis, haud gelatinosis.—Sub Nothofago obliqua ad terram.—Typus a R. Singer (M 6916) lectus, in SGO conservatur.

Material studied: CHILE: Valdivia: Cuesta Santa Elvira, 15–V–1967, Singer M 6916 (SGO), typus.

This species is similar to *R. flava*, but has clamp connections.

RAMARIA ZIPPELII (Lév.) Corner, Clavaria and allied gen. p. 632, 1950.

Description see there. Cf. also Singer & Moser, Mycopath. & Mycol. Appl. p. 133, 140, 145, 1965.—Basidia (1)–2-spored; hyphae with clamp connections.

RAMARIA STRASSERI (Bres.) Corner, Clavaria and allied gen. p. 622. 1950.

Description see there. In our material, the sterigmata are (1–3)–4-spored or 4-spored; spores once 12–(13.5) × 4–5–(7.5) μ, once 13–16 × 4.3 μ,

once 16–18.3 × 5–5.7 μ in M 5177, M 5140, M 5301 respectively. Hyphae with clamp connections.

Material studied: ARGENTINA: Rio Negro: Cerro Catedral, 27–IV–1965, Singer M 5177 (BAFC).—Lago Morena, 26–IV–1965, Singer M 5301 (BAFC).—Neuquén: Quetrihué, 21–IV–1965, Singer M 5140 (BAFC).

Other clavarioid fungi

Pterula graminicola (Bourdot & Galzin) Sing. comb. nov.

Pistillaria graminicola Bourdot & Galzin, Hym. Fr., p. 139. 1928.

Carpophores simple, spine-like, with acute sterile apex, white 2–4 mm high, 0.1 mm thick, smooth, insiticious, drying buffish, inodorous, rather toughish.

Spores 7–9 × 4–5 μ, ovoid to ellipsoid, hyaline, smooth, without oil-drops, inamyloid.—Basidia forming a continuous hymenium between the apex which is sterile, and the base which is likewise sterile, hymenium retreating upwards, leaving islands of steril patches with basidia and basidioles in the lower sterile zone; basidia 18–21 × 5.5–8.5 μ, 1–2-spored, with basal clamp; cystidia 25–35 × 5.5–9.5 μ, ventricose or at times with constriction in the middle, generally thin-walled but the constricted ones of the residual hymenium patches below often 0.5 μ thick walled.—Hyphae with clamp connections (secondary septa without clamps none seen), (2)–3–(4) μ broad, with either thin, or with 0.5–1 μ thick wall, these two types of hyphae longitudinally arranged and intermixed with one another, hyaline or subhyaline, somewhat connivent towards the tip of the carpophore, not gelatinized, inamyloid, the thin-walled hyphae more numerous towards the subhymenium; subhymenium formed by thin-walled hyaline elements.

On culms of *Chusquea*, gregarious.

Material studied: CHILE: Llanquihue, El Frutillar, 16–IX–1967, Singer M 7555 (SGO).

CHAETOTYPHULA ACTINICEPS (Petch) Corner, Clavaria and allied gen. p. 209. 1960.

Carpophores subcylindric, 2 × 0.2 mm, white, pubescent under a lens all over, fleshy, inodorous, very fragile when dried, insiticious.

Spores (9)–12–13.5 × (7)–11–12.5 μ, subglobose to very short ellipsoid, with or without internal oil drops or with just one or two oil droplets, inamyloid, smooth, hyaline.—Basidia 30–50 × 10 μ, (1)–2-spored, clavate, hyaline, with basal clamp; basidioles often as small as 12 × 6 μ, but also larger, clavate to ellipsoid, hyaline, with basal clamp or more rarely without clamp. Cystidia metuloid, 68–125 × 6–15 μ, with thick

(1–1.5 μ) hyaline wall excepting the apical quarter or less where they are thin-walled, but sometimes thick-walled all over, inamyloid, some slightly incrusted at the apex, rather numerous, cylindric, some with basal ventricosity or slightly tapering upwards to an always rounded-obtuse tip, entire.—Hyphae of the interior hyaline, broader in the inner core and somewhat swelling there, with constricted septa, reaching 12.5 μ in width but generally more filamentous towards the hymenium and there mostly 2–3 μ broad, strongly interwoven in all portions, with clamp connections but with numerous clampless secondary septa, not gelatinized anywhere, inamyloid.—The spores are asymmetrically attached at the tips of the sterigmata which are acute and curved, hilar appendage triangular or subcylindric and short but distinct, spore wall firm but thin, spores germinating with a short excrescency at the distal end in situ (on the living hymenium).

On dead leaves of Dicotyledones.

Material studied: CHILE: Osorno: Pilmayquen, 13–V–1967, Singer M 6875 (SGO).

This genus is new for South America.

Pistillaria saxegothaeae Sing. spec. nov.—Carpophoris claviformibus, 1.5–4.5 mm altis, ad basin 0.1–0.4 mm latis, ad claviculam 0.3–0.6 mm latis, albis, ad basin glabro et abrupte sterili, ad claviculam glabro et fertili, primum subgloboso vel ellipsoideo dein clavato vel fusiformi, contexto albo, inodoro, superficie demum sordide ochracea.—Sporis 7.7–10 × 3.6–5.2 μ, oblongis vel oblongis et leniter curvatis, levibus, hyalinis, inamyloideis, membrana tenui et homogenea instructis, appendice hilari excentrico.—Basidia 20–31 × 6–8 μ, 2–4-sporis, hyalinis, clavatis. Cystidiis nullis.—Hyphis fibulatis, hyalinis, haud gelatinosis, elongatis, dense aggregatis, subparallelis, inamyloideis.—Parte sterili basali pilis minutissimis 6–33 × 4–6.5 μ tenui- vel subtenui-tunicatis, plus minusve cylindraceis, levibus obsita. In hymenio interdum cystidiolis e.gr. 27.5 × 12.5 μ saccatis, tenui-tunicatis, contentu visibili nullo repletis obviis.—Ad ramulos emortuos Saxegothaeae in silva.—Typus a R. Singer (M 3256) lectus et in BAFC depositus.

Material studied: CHILE: Valdivia: West slope of the Cordillera Pelada, at 800 m alt., 30–III–1963, Singer M 3256 (BAFC), typus.—ARGENTINA: Rio Negro: Path from Laguna Frías to Paso de las Nubes, 800 m alt., 2–V–1964, Singer M 3546 (BAFC).

Clavulina angustisperma Sing. spec. nov.—Carpophoris 20 × 2 mm, fusoideo-subcylindraceis, albis, simplicibus, ad apicem acutum cremeis, glabris, insiticiis, haud gelatinosis, inodoris.—Sporis 8–9.5 × 3.5–4 μ,

anguste ellipsoideo-oblongis saepe curvatis, hyalinis, levibus.—Basidiis 30–35 × 3.5–5 μ, ad basin fibulatis, cylindraceis, vel anguste clavatis, sterigmatibus duobus vel tribus, 3–4.8 μ longis, curvatis.—Hyphis elongatis, hyalinis, haud gelatinosis, fibulis normalibus vel typi "medallion", septis secundariis defibulatis etiam obviis, diametro hypharum 2–10 μ.—Ad lignum emortuum Austrocedri chilensis.—Typus (M 5061) a R. Singer lectus et in BAFC depositus est.

Material studied: ARGENTINA: Rio Negro: near Santa María, Lago Nahuel Huapí, 19–IV–1965, Singer M 5061 (BAFC), typus.

The position of this species is somewhat uncertain.

CLAVICORONA TURGIDA (Lév.) Corner, Darwiniana 11: 195. 1957.

Description see there. However, our material has spores 4.3–6.2 × 2.7–4.1 μ, finely punctate-verruculose, amyloid. Gloeovessels and gloeocystidia present, although at times scarce. Basidia 4-spored. Hyphae somewhat to strongly gelatinized, monomitic, with large clamp connections. It grows on rotten wood as well as on earth.

Material studied: CHILE: Valdivia: west slope of the Cordillera Pelada, Chivería, 7–V–1967, Singer M 6748 (SGO).—ARGENTINA: Rio Negro: Laguna Frías, 2–V–1964, Singer M 3838 (BAFC).—Cerro Catedral, 25–IV–1965, Singer M 5182 A (BAFC).—Path from Laguna Frías to Paso de las Nubes, 24–III–1963, Singer M 3184 (BAFC).—Neuquén: Cerro Cortinario above Puerto Manzano, 26–IV–1963, Singer M 3579 (BAFC).—Arroyo Frutillas, 20–IV–1965, Singer M 5204 (BAFC).—Quetrihué, 15–V–1952, Singer M 625, M 642 (LIL).—Puerto Manzano, 18–V–1952, Singer M 745 (LIL).—Some of these collections were kindly determined by Dr. Corner.

LENTARIA SURCULUS (Bk.) Corner, Clavaria and allied gen., p. 439. 1950.

According to our data which agree with those published by Corner l.c., this southern form agrees as well with those on *L. byssiseda* Corner.

Material studied: CHILE: Valdivia, west slope of Cordillera Pelada, at 420 m alt., in *Eucryphia*-woods, 7–V–1965, Singer M 5462 (BAFC).—ARGENTINA: Neuquén: Quetrihué, 15–V–1952, Singer M 644 (LIL).—Isla Victoria, 17–V–1952, Singer M 689 (LIL).

CLAVULINOPSIS HEXASPORA Corner, Darwiniana 11: 197. 1957.

Description see there.

Material studied: ARGENTINA: Neuquén: Quetrihué, 15–V–1952, Singer M 613 (LIL), typus.—Puerto Manzano, 18–IV–1965, Singer M 5041 (BAFC).

CLAVULINOPSIS AMOENA (Zoll. & Mor.) Corner, Clavaria and allied gen. p. 352. 1950.

Our specimens are egg yellow, and have a spore apiculus 0.5–1.3 μ long whereas our specimens of what we (and Corner) determined as *C. pulchra* have a spore apiculus 1–2 μ long; the spores are variable in both species, although perhaps more often subglobose in the former than in the latter, but the young spores seem to be more elongated than the old ones, and therefore variable in shape.

The complex of *C. amoena-pulchra-fusiformis* is in need of further study.

For the time being we determine as *C. amoena* the following southern collections:

CHILE: Colchagua: Pumanque, 5–IX–1966, W. Lazo PU-35 (SGO).—Coquimbo: Fray Jorge, 16–IV–1967, Singer M 6510 (SGO).—ARGENTINA: Neuquén: near Villa La Angostura, 18–IV–1965, Singer M 5026 (BAFC).

CLAVULINOPSIS PULCHRA (Peck) Corner, Clavaria and allied gen. p. 384. 1950.

Description see Corner, l.c.

Material studied: CHILE: Valdivia: west slope of the Cordillera Pelada at 750 m alt., 6–V–1965, Singer M 5538 (BAFC).—ARGENTINA: Neuquén: Arroyo Frutillas, 28–IV–1965, Singer M 3614 (BAFC).—Rio Negro: Laguna Frías, 2–V–1964, Singer M 3839 (BAFC).

CLAVARIA PAMPAEANA Speg., Fungi arg. Pug. 3, no. 40, 1881.

The systematic position of this fungus remains somewhat doubtful to me. Therefore I give a description of our specimens:

Carpophores all white, 7–28 mm high, sterile stipe up to 16 mm high, diameter 0.5–1 mm, glabrous, with broadened obtuse upper fertile portion, with white context, inodorous.

Spores 7–10 × 6–8 μ, subglobose, or short ellipsoid, smooth, hyaline, inamyloid, with short (less than 1 μ long) apiculus, or some with an apiculus up to 1.2 μ long, with yellowish to hyaline contents, with one round or somewhat amorphous, or several small oil drops, or without any oil drop.—Basidia 25–54 × 7.5–12 μ, (1–2–3)–4-spored, clavate, at base mostly with normal clamp, twice seen with noose-like (forked) clamp, sterigmata about 6–8.5 μ long.—Cystidia none.—Hyphae difficult to observe as for clamp connections, but at least one seen in each preparation, monomitic, 3.5–12 μ broad, not gelatinized, running axillary, hyaline.

On rotten wood and on sandy earth in woods and near trees.

Material studied: CHILE: Cautín: Paso Tromen, 1600 m alt., 2–V–

1965, Singer M 5503 a (BAFC).—Osorno: Lago Puyehue, 14–IX–1967, Singer M 7516 (SGO).—ARGENTINA: Arroyo Frutillas (Neuquén), 28–IV–1964, Singer M 3611 A (BAFC).

Unless the type seen by Corner is different, this differs from *Clavaria acuta* inasmuch as the spores are more often uni-guttulate than otherwise, and clamps other than loop-clamps at the base of the basidia, are at least scattered. Some of our specimens were determined *C. acuta* by Corner. For the time being we prefer to preserve the Spegazzinian name for the South American material.

Clavaria albidobisa Sing. spec. nov.—Carpophoris fuscogriseis ("racquet" M & P), ad apices atrioribus ("Piccaninny" M & P), pallescentibus (usque ad "grain" M & P), ad ramos inferiores et ad truncum albis, dein inter album et griseum ("Hamadan" in ramis, albidis in trunco coralloideo-ramosis, usque ad 100 mm altis, usque ad 90 mm latis, apicibus demum grisello-pallidis (pallidioribus quam "Biarritz" M & P), cylindraceo-obtusis dein subacutis vel acutis, ramis primum densissimis, dein laxis, trunco usque ad 30 mm alto, ramulis plus minusve 2 mm latis, non constanter bifidis, trunco ramisque glabris, contexto albo, immutabili, inodoro, miti.—Sporis (6)–6.5–8 × 2.5–4–(4.5) μ, ellipsoideis vel frequentius oblongis, immo interdum leniter curvatis, eguttulatis vel rarius guttula una interna, levibus, membrana homogenea tenui inamyloidea instructis.—Basidiis 26–39 × (5)–6–7.5 μ, 2–4-sporis, clavatis vel leniter ventricosis, ad basin haud fibulatis. Cystidiis nullis.—Hyphis ramulorum hyalinis, tenui-tunicatis vel subcrasse tunicatis, densis, haud gelatinosis, parallelis vel subparallelis, inamyloideis, defibulatis, in trunco magis intertextis, densis, superficiem versus magis laxe intertextis.—Ad quisquilias sub *Persea lingue,* haud lignicola, gregatim sed haud caespitose crescens, vernalis.—Typus (M 7814) a R. Singer in Chile lectus et in herbario SGO conservatus est.

This is a strange species without visible affinities.

Material studied: CHILE: Concepción: Boca del Bio-Bio, 11–XI–1967, Singer M 7814 (SGO), typus.

SCHIZOPHYLLACEAE

Schizophyllum

SCHIZOPHYLLUM COMMUNE Fr., Syst. Mycol. 1: 330. 1821.

Description see Linder, Amer. J. Bot. 20: 555. 1933.

Common all over the area.

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